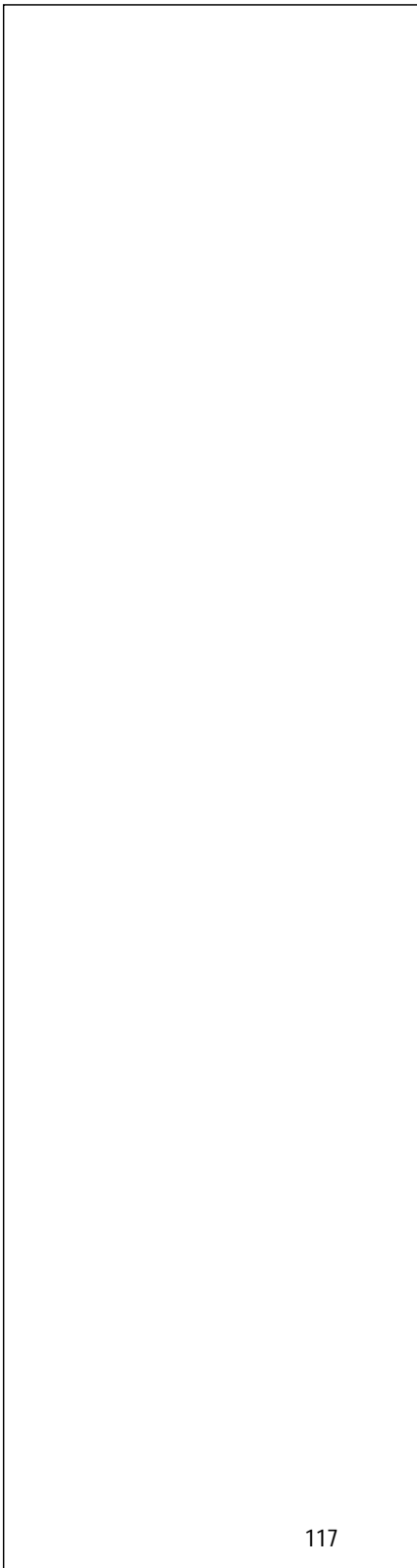




General-Purpose Linear ICs

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Operational Amplifier ICs (Op Amp ICs) & Comparator ICs

Operational Amplifier ICs (Op Amp ICs) & Comparator ICs (Bipolar, Single-Circuit Type)

Part Number	Package	Marking	Functions	Features	Operating Voltage (V)	Pin Configuration (Top View) (Unit: mm)
TA75S393F	SMV	TA	Bipolar comparator	Single/dual power supply, open-collector output	2 to 36 or ± 1 to ± 18	
TA75S01F	SMV	SA	Bipolar op amp	Single/dual power supply, unity gain stable	3 to 12 or ± 1.5 to ± 6	
TA75S558F	SMV	SB		Dual power supply	± 4 to ± 18	

- Note that input pin configurations of the single op amp and comparator ICs differ.

(Bipolar, Dual-Circuit Type)

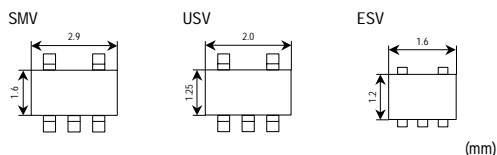
Part Number	Package	Marking	Functions	Features	Operating Voltage (V)	Pin Configuration (Top View) (Unit: mm)
TA75W393FU	SM8	5W393	Bipolar comparator	Single/dual power supply, open-collector output	2 to 36 or ± 1 to ± 18	
TA75W01FU	SM8	5W01	Bipolar op amp	Single/dual power supply, unity gain stable	3 to 12 or ± 1.5 to ± 6	
TA75W558FU	SM8	5W558		Dual power supply	± 4 to ± 18	

(CMOS, Single-Circuit Type)

Part Number	Package	Marking	Functions	Features	Operating Voltage (V)	Pin Configuration
TC75S56F	SMV	TC	CMOS comparator	Single/dual power supply, push-pull output, ultra-low current consumption	1.8 to 7 or ±0.9 to ±3.5	
TC75S56FU	USV					
TC75S56FE	ESV					
TC75S57F	SMV	TD		Single/dual power supply, push-pull output, low current consumption	1.8 to 7 or ±0.9 to ±3.5	
TC75S57FU	USV					
TC75S57FE	ESV					
TC75S58F	SMV	TE		Single/dual power supply, open-drain output, ultra-low current consumption	1.8 to 7 or ±0.9 to ±3.5	
TC75S58FU	USV					
TC75S58FE	ESV					
TC75S59F	SMV	TF	Single/dual power supply, open-drain output, low current consumption	1.8 to 7 or ±0.9 to ±3.5		
TC75S59FU	USV					
TC75S59FE	ESV					
TC75S51F	SMV	SC	CMOS op amp	Single/dual power supply, low-voltage operation	1.5 to 7 or ±0.75 to ±3.5	
TC75S51FU	USV					
TC75S51FE	ESV					
TC75S54F	SMV	SE		Single/dual power supply, low-voltage operation, low current consumption	1.8 to 7 or ±0.9 to ±3.5	
TC75S54FU	USV					
TC75S54FE	ESV					
TC75S55F	SMV	SF		Single/dual power supply, low-voltage operation, ultra-low current consumption	1.8 to 7 or ±0.9 to ±3.5	
TC75S55FU	USV					
TC75S55FE	ESV					
TC75S60F *	SMV	SH	Single/dual power supply, high slew rate, high fr, low-voltage operation, low current consumption	1.8 to 7 or ±0.9 to ±3.5		

• Note that input pin configurations of the single op amp and comparator ICs differ. The US8 and SM8 types have the same pin configuration.

*: New product



(CMOS, Dual-Circuit Type)

Part Number	Package	Marking	Functions	Features	Operating Voltage (V)	Pin Configuration (Top View) (Unit: mm)
TC75W56FU	SM8	5W56	CMOS comparator	Single/dual power supply, push-pull output, ultra-low current consumption	1.8 to 7 or ±0.9 to ±3.5	
TC75W56FK	US8					
TC75W57FU	SM8	5W57		Single/dual power supply, push-pull output, low current consumption	1.8 to 7 or ±0.9 to ±3.5	
TC75W57FK	US8					
TC75W58FU	SM8	5W58		Single/dual power supply, open-drain output, ultra-low current consumption	1.8 to 7 or ±0.9 to ±3.5	
TC75W58FK	US8					
TC75W59FU	SM8	5W59		Single/dual power supply, open-drain output, low current consumption	1.8 to 7 or ±0.9 to ±3.5	
TC75W59FK	US8					
TC75W51FU	SM8	5W51		CMOS op amp	Single/dual power supply, low-voltage operation	
TC75W51FK	US8					
TC75W54FU	SM8	5W54	Single/dual power supply, low-voltage operation, low current consumption		1.8 to 7 or ±0.9 to ±3.5	
TC75W54FK	US8					
TC75W55FU	SM8	5W55	Single/dual power supply, low-voltage operation, ultra-low current consumption		1.8 to 7 or ±0.9 to ±3.5	
TC75W55FK	US8					
TC75W60FU *	SM8	5W60	Single/dual power supply, high slew rate, high fr, low-voltage operation, low current consumption		1.8 to 7 or ±0.9 to ±3.5	
TC75W60FK *	US8					

*: New product

Calculation Amp IC Series (Comparator ICs)

Part Number	Package	# of Circuits	Characteristics				Power Supply Voltage (V)	Remarks	Equivalent
			Input Offset Current Max (nA)	Input Offset Voltage Max (mV)	Input Bias Current Max (nA)	Response Speed Typ. (ns)			
TA7522S	SIP9	Dual	300	10	-2000	—	+18	Open-collector output	—
TA7522F	SOP8	Dual	300	10	-2000	—	+18	Open-collector output	—
TA8504F/FG	SOP8	Single	10000	±10	40000	tr = 1.0 tf = 0.7	-5	ECL output	—
TA8517F/FG	SOP16	Dual	3000	±10	6000	tr = 4.0 tf = 2.0	+5	TTL output, Offset adjustment pin	—

Intelligent Power Devices (IPDs)

60 V Series

Part Number	Package	Features	Outlines	Junction (Channel) Temperature Tj (°C)	Power Dissipation Pd (W)	Characteristics								Operating Temperature Topr (°C)	Operating Supply Voltage (V)
						Protective Functions			Diagnostic Functions				Input/ Output		
						Overcurrent Is (A)	Over-temperature Ts (°C)	Overvoltage Vs (V)	Short Load	Open Load	Over-temperature	Overvoltage			
TPD1008SA	5-pin TO-220NIS	High-side switch	V _{DSS} 60 V I _o 4 A R _{Ds(ON)} = 0.2 Ω max	150	30	6 typ.	160 typ.	—	○ DIAG L	○ DIAG H	○ DIAG L	—	H/H	-40 to 110	5 to 18
TPD1009S	5-pin TO-220NIS	High-side switch	V _{DSS} 60 V I _o 8 A R _{Ds(ON)} = 0.06 Ω max			12 typ.	160 typ.	—	○ DIAG L	○ DIAG H	○ DIAG L	—	H/H		5 to 18
TPD1018F ★	SSOP-10	High-side switch	V _{DSS} 60 V I _o 0.5 A R _{Ds(ON)} = 0.8 Ω max		0.3	1.5 typ.	160 typ.	30 typ.	○ DIAG L	—	○ DIAG L	○ DIAG L	H/H	-40 to 125	5 to 25
TPD1024S	PW-Mold	Low-side switch	V _{Ds(DC)} 40 V I _o 1.5 A R _{Ds(ON)} = 0.5 Ω max		1	3.5 typ.	160 typ.	Active clamp 40 min	—	—	—	—	H/L	-40 to 85	Up to 18
TPD1024AS	TPS	Low-side switch	V _{Ds(DC)} 40 V I _o 1.5 A R _{Ds(ON)} = 0.5 Ω max		1.2	3.5 typ.	160 typ.	Active clamp 40 min	—	—	—	—	H/L	-40 to 85	Up to 18
TPD1030F	SOP-8	2-ch low-side switch	V _{Ds(DC)} 40 V I _o 1 A R _{Ds(ON)} = 0.6 Ω max		2.0 (t = 10 s) (mounted on board)	1 min	160 typ.	Active clamp 40 min	—	—	—	—	H/L	-40 to 110	Up to 40
TPD1031AF	TO-220SM	Low-side switch	V _{Ds(DC)} 50 V I _o 8 A R _{Ds(ON)} = 0.065 Ω max		50 (Tc = 25°C)	8 min	160 typ.	Active clamp 50 min	—	—	—	—	H/L		Up to 18
TPD1032F	SOP-8	2-ch low-side switch	V _{Ds(DC)} 20 V I _o 3 A R _{Ds(ON)} = 0.4 Ω max		2.0 (t = 10 s) (mounted on board)	3 min	160 typ.	Active clamp 40 min	—	—	—	—	H/L		Up to 20
TPD1033F	SOP-8	High-side switch	V _{DSS} 60 V I _o 4 A R _{Ds(ON)} = 0.22 Ω max		2.4 (t = 10 s) (mounted on board)	6 typ.	160 typ.	—	○ DIAG L	○ DIAG H	○ DIAG L	—	H/H		5 to 18
TPD1034F	SOP-8	High-side switch	V _{DSS} 60 V I _o 8 A R _{Ds(ON)} = 0.08 Ω max		12 typ.	160 typ.	—	—	○ DIAG L	○ DIAG H	○ DIAG L	—	H/H	Up to 30	
TPD1036F	SOP-8	2-ch low-side switch	V _{Ds(DC)} 30 V I _o 1.5 A R _{Ds(ON)} = 0.5 Ω max		2.0 (t = 10 s) (mounted on board)	1.5 min	160 typ.	Active clamp 40 min	—	—	—	—	H/L		
TPD1037BS	LSTM	Low-side switch	V _{Ds(DC)} 40 V I _o 1.5 A R _{Ds(ON)} = 0.25 Ω max		0.9	In-rush 10 typ. Shorted load 3 typ.	160 typ.	Active clamp 40 min	—	—	—	—	H/L	-40 to 85	Up to 40
TPD1038F	SOP-8	High-side switch	V _{DSS} 60 V I _o 3 A R _{Ds(ON)} = 0.12 Ω max		1.1 (mounted on board)	3 min	150 min	Active clamp 50 min	○ DIAG L	○ DIAG H	○ DIAG L	—	H/H	-40 to 110	6 to 18
TPD1039F	SOP-8	Low-side switch	V _{Ds(DC)} 45 V I _o 1.5 A R _{Ds(ON)} = 0.25 Ω max		1.1 (mounted on board)	5 typ.	125 min	Active clamp 45 min	—	—	—	—	H/L	-40 to 85	Up to 45
TPD1039S	LSTM	Low-side switch	V _{Ds(DC)} 45 V I _o 1.5 A R _{Ds(ON)} = 0.25 Ω max		0.9	5 typ.	125 min	Active clamp 45 min	—	—	—	—	H/L	-40 to 85	Up to 45
TPD1042F	SOP-8	High-side switch	V _{DSS} 60 V I _o 7 A R _{Ds(ON)} = 0.18 Ω max		1.1 (mounted on board)	7 min	150 min	—	○ DIAG L	○ DIAG H	○ DIAG L	—	H/H	-40 to 115	6 to 18
TPD1044F ◆	PS-8	Low-side switch	V _{Ds(DC)} 41 V I _o 1 A R _{Ds(ON)} = 0.6 Ω max	0.9 (mounted on board)	1 min	160 typ.	Active clamp 41 min	—	—	—	—	H/L	-40 to 125	Up to 41	
TPD1045F **	SOP-8	Low-side switch	V _{Ds(DC)} 50 V I _o 5 A R _{Ds(ON)} = 0.1 Ω max	1.1 (mounted on board)	5 min	170 typ.	Active clamp 50 min	—	—	—	—	H/L	-40 to 125	up to 18	
TPD1046F **	SOP-8	2-ch low-side switch	V _{Ds(DC)} 40 V I _o 3 A R _{Ds(ON)} = 0.2 Ω max	1.08 (mounted on board)	3 min	160 typ.	Active clamp 40 min	—	—	—	—	H/L	-40 to 125	up to 20	

◆: Lead(Pb)-Free

** : Under development

★: The suffix (F) appended to the part number represents a Lead(Pb)-Free product. For details, please contact your nearest Toshiba sales representative.

• The above products may be available in a version in which the outer leads of the part are Lead(Pb)-Free-Finished.

60 V Series (Continued)

Part Number	Package	Features	Characteristics										Operating Temperature Topr (°C)	Operating Supply Voltage (V)	
			Outlines	Junction (Channel) Temperature Tj (°C)	Power Dissipation Pd (W)	Protective Functions			Diagnostic Functions						Input/ Output
						Overcurrent Is (A)	Over-temperature Ts (°C)	Overvoltage Vs (V)	Short Load	Open Load	Over-temperature	Overvoltage			
TPD2004F ☆	SSOP-24	2-ch squib driver for air bags, high-side switch	V _{BB} 30 V R _{DS(ON)} = 1 Ω max	150	0.8	—	—	—	1) Squib-short, short-to-battery, and open-circuit detection 2) When an abnormal condition is diagnosed, the safing sensor is turned on. 3) Diagnosis performed on squib driver's internal MOSFET				When LSD = L and HSD = H, squib ignites.	-40 to 85	V _{BB} = 4 to 25 V _{CC} = 4.75 to 5.25
TPD2005F ☆	SSOP-24	8-ch high-side switch	V _{DD} 45 V I _O 1 A R _{DS(ON)} = 1.2 Ω max		0.8	1.0 min	160 typ.	—	—	—	—	H/H	-40 to 85	8 to 40	
TPD2007F ☆	SSOP-24	8-ch low-side switch	V _{DS(DC)} 40 V I _O 1 A R _{DS(ON)} = 1.4 Ω max		0.8	1.0 min	160 typ.	Active clamp 40 min	—	—	—	H/L	up to 40		
TPD7000AF ☆	SSOP-24	4-ch low-side Power MOSFET driver	V _{DH} 25 V I _O 20 mA max		0.5	V _{DS} monitor 1.0 V typ.	—	Active clamp 35 V typ.	○ DIAG L	○ DIAG H	—	—	H/H (ENB = "H")	-40 to 110	V _{DH} = 8 to 18 V _{DL} = 4.5 to 5.5
TPD7101F ☆	SSOP-24	2-ch high-side Power MOSFET driver (with built-in charge pump)	V _{DD} 30 V Source current 0.1 A typ. Sink current 0.1 A typ.		0.8	Adjustable	—	○ (Undervoltage detected at 4.5 V max)	Overcurrent	—	—	—	H/H	8 to 18	
TPD7203F ☆	SSOP-24	Power MOSFET driver for 3-phase DC motors (built-in charge pump circuit)	V _{DD} 30 V Source current 1 A max Sink current 1 A max		0.8	—	—	○ (Undervoltage detected at 6.0 V typ.)	—	—	—	○ FAULT H (only under voltage)	H/H	-40 to 125	7 to 18

☆: Dry-packed

- The above products may be available in Lead(Pb)-Free versions. For details, please contact your nearest Toshiba sales representative.

250 V / 500 V Series

Part Number	Package	Functions	Output Type	Characteristics				Rating (V/A)
				Features	Protective Functions			
					Overcurrent	Over-temperature	Undervoltage	
TPD4101K	HZIP23	Hall IC input, bootstrap circuit, PWM, 3-phase decoder	3-phase full-bridge	High-voltage PWM DC brushless motor driver	○	○	○	250±1
TPD4102K	HZIP23	Hall IC input, bootstrap circuit, PWM, 3-phase decoder	3-phase full-bridge	High-voltage PWM DC brushless motor driver	○	○	○	500±1
TPD4104K	HZIP23	6-input, low-side driver, high-side driver	3-phase full-bridge	High-voltage PWM DC brushless motor driver	○	○	○	500±2
TPD4104AK	HZIP23	6-input, low-side driver, high-side driver	3-phase full-bridge	High-voltage PWM DC brushless motor driver	—	○	○	500±2
TPD4105K **	HZIP23	6-input, low-side driver, high-side driver	3-phase full-bridge	High-voltage PWM DC brushless motor driver	○	○	○	500±3
TPD4105AK **	HZIP23	6-input, low-side driver, high-side driver	3-phase full-bridge	High-voltage PWM DC brushless motor driver	—	○	○	500±3
TPD4111K	HZIP23	Hall amplifier input, bootstrap circuit, PWM, 3-phase decoder	3-phase full-bridge	High-voltage PWM DC brushless motor driver	○	○	○	250±1
TPD4112K	HZIP23	Hall amplifier input, bootstrap circuit, PWM, 3-phase decoder	3-phase full-bridge	High-voltage PWM DC brushless motor driver	○	○	○	500±1
TPD4113K	HZIP23	6-input, low-side driver, high-side driver	3-phase full-bridge	High-voltage PWM DC brushless motor driver	○	○	○	500±1
TPD4113AK	HZIP23	6-input, low-side driver, high-side driver	3-phase full-bridge	High-voltage PWM DC brushless motor driver	—	○	○	500±1

• The above products may be available in a version in which the outer leads of the part are Lead(Pb)-Free-Finished.

** : Under development

Interface Drivers

Transistor Arrays (Transistor Arrays/Interface Drivers)

Part Number	Package	Device Type	# of Circuits	Structure	Characteristics				Power Supply Voltage (V)
				Output Clamp Diodes	Output Breakdown Voltage (V)	Output Current (mA)	Input Resistor (Ω)	Recommended Input Voltage (V)	
TD62001AP/PG/AF/AFG	DIP16/SOP16	Darlington driver	7	○	50	500	NA	Any	—
TD62002AP/PG/AF/AFG	DIP16/SOP16	Darlington driver	7	○	50	500	10.5 k + 7 VZ.D.	14 to 15	—
TD62003AP/PG/AF/AFG	DIP16/SOP16	Darlington driver	7	○	50	500	2.7 k	5	—
TD62004AP/PG/AF/AFG	DIP16/SOP16	Darlington driver	7	○	50	500	10.5 k	6 to 15	—
TD62006P/PG/F/FG	DIP14/SOP14	Darlington driver	6	○	22	150	20 k	6 to 20	—
TD62008AP/PG/AF/AFG	DIP16/SOP16	Darlington driver	7	○	50	400	20 k	6 to 20	—
TD62064AP/PG/AF/AFG /BP-1/BP1G/BF/BFG	DIP16/ HSOP16	High-current darlington driver	4	○	50/50/80/80	1500	230	5	—
TD62074AP/PG/AF/AFG	DIP16/ HSOP16	Isolated high-current darlington driver	4	○	50	1500	230	5	—
TD62081AP/PG/AF/AFG	DIP18/SOP18	Darlington driver	8	○	50	500	NA	Any	—
TD62082AP/PG/AF/AFG	DIP18/SOP18	Darlington driver	8	○	50	500	10.5 k + 7 VZ.D.	14 to 25	—
TD62083AP/PG/AF/AFG /AFN/AFNG	DIP18/SOP18 SSOP18	Darlington driver	8	○	50	500	2.7 k	5	—
TD62084AP/PG/AF/AFG /AFN/AFNG	DIP18/SOP18 SSOP18	Darlington driver	8	○	50	500	10.5 k	6 to 15	—
TD62101P/PG/F/FG	DIP16/SOP16	Darlington driver	7	○	25	500	NA	Any	—
TD62103P/PG/F/FG	DIP16/SOP16	Darlington driver	7	○	25	500	2.7 k	5	—
TD62104P/PG/F/FG	DIP16/SOP16	Darlington driver	7	○	25	500	10.5 k	6 to 15	—
TD62105P/PG/F/FG	DIP16/SOP16	Darlington driver	7	○	25	500	20 k	12 to 25	—
TD62107P/PG/F/FG	DIP16/ HSOP16	Darlington driver (with Enable pin)	4	○	45/35	750	LS, TTL- Compatible	5	17
TD62164AP/PG/AF/AFG /BP/BPG/BF/BFG	DIP16/ HSOP16	High-current, low-saturation driver	4	○	50/80/50/80	700	2 k	5 to 15	17
TD62304AP/PG/AF/AFG /AFN/AFNG	DIP16/SOP16 SSOP16	Low-input-active darlington driver	7	○	50	500	14 k	5	7
TD62305AP/PG/AF/AFG /AFN/AFNG	DIP16/SOP16 SSOP16	Low-input-active darlington driver	7	○	50	500	14 k + D.	5	7
TD62307P/PG/F/FG	DIP16/SOP16	Low-saturation driver	7	○	20	150	20 k	5 to 18	20
TD62308AP/PG/AF/AFG /BP-1/BPG/BF/BFG	DIP16/ HSOP16	Low-input-active darlington driver	4	○	50/50/80/80	1500	4 k	5	10
TD62309P/PG/F/FG	DIP16/ HSOP16	Low-saturation driver	6	○	20	700	2 k	5	10
TD62318AP/PG/AF/AFG /BP/BPG/BF/BFG	DIP16/ HSOP16	Low-input-active, low-saturation driver	4	○	50/80/50/80	700	4 k	5	17
TD62381P/PG/F/FG/FN/FNG	DIP18/SOP18 SSOP18	Low-saturation driver	8	○	15	500	2.7 k	5 to 18	7
TD62382AP/PG/AF/AFG /AFN/AFNG	DIP18/SOP18 SSOP18	Low-input-active, low-saturation driver	8	○	50	50	14 k	5 to 18	7
TD62383P/PG	DIP20	Low-input-active, low-saturation driver	8	○	10	500	14 k + D.	5 to 18	7
TD62384AP/PG/AF/AFG	DIP18/SOP18	Low-input-active darlington driver	8	○	50	500	14 k	5 to 18	7
TD62385AP/PG/AF/AFG	DIP18/SOP18	Low-input-active darlington driver	8	○	50	500	14 k + D.	5 to 18	7
TD62386AP/PG/AF/AFG	DIP20/SOP20	Low-input-active darlington driver	8	○	50	500	14 k	5 to 7	7
TD62387AP/PG/AF/AFG /AFN/AFNG	DIP20/SOP20 SSOP20	Low-input-active darlington driver	8	○	50	500	14 k + D.	5 to 7	7
TD62388AP/PG/AF/AFG /AFN/AFNG	DIP20/SOP20 SSOP20	Low-input-active darlington driver	8	○	50	500	14 k + D.	5 to 7	7
TD62501P/PG/F/FG	DIP16/SOP16	Single-transistor array (common emitter)	7	○	35	200	NA	Any	—
TD62502P/PG/F/FG/FN/FNG	DIP16/SOP16 SSOP16	Single-transistor array (common emitter)	7	○	35	200	10.5 k + 7 VZ.D.	14 to 25	—
TD62503P/PG/F/FG/FN/FNG	DIP16/SOP16 SSOP16	Single-transistor array (common emitter)	7	○	35	200	2.7 k	5	—
TD62504P/PG/F/FG/FN/FNG	DIP16/SOP16 SSOP16	Single-transistor array (common emitter)	7	○	35	200	10.5 k	6 to 15	—
TD62505P/PG/F/FG	DIP16/SOP16	Single-transistor array (common collector)	7	○	35	-200	NA	Any	—
TD62506P/PG/F/FG	DIP16/SOP16	Single-transistor array (common collector)	7	○	35	-200	2.7 k	5	—

• The suffix (G) appended to the part number represents a Lead(Pb)-Free product. For details, please contact your nearest Toshiba sales representative.

Part Number	Package	Device Type	# of Circuits	Structure	Characteristics				Power Supply Voltage (V)
				Output Clamp Diodes	Output Breakdown Voltage (V)	Output Current (mA)	Input Resistor (Ω)	Recommended Input Voltage (V)	
TD62507P/PG/F/FG	DIP16/SOP16	Isolated single-transistor array	5		35	-200	NA	Arbitrary	—
TD62551S/SG	SIP9	Single-transistor array (common emitter)	4		25	150	NA	Arbitrary	—
TD62553S/SG	SIP9	Single-transistor array (common emitter)	4		25	150	2.7 k	5	—
TD62554S/SG	SIP9	Single-transistor array (common emitter)	4		25	150	10.5 k	6 to 15	—
TD62555S/SG	SIP9	Single-transistor array (common emitter)	4		25	150	20 k	12 to 25	—
TD62583AP/PG/AF/AFG	DIP18/SOP18	Single-transistor array (common emitter)	8		50	50	2.7 k	5	—
TD62591AP/PG	DIP18	Single-transistor array (common emitter)	8		50	200	NA	Arbitrary	—
TD62592AP/PG	DIP18	Single-transistor array (common emitter)	8		50	200	10.5 k + 7 V.Z.D.	14 to 25	—
TD62593AP/PG/AFN/AFNG	DIP18/SSOP18	Single-transistor array (common emitter)	8		50	200	2.7 k	5	—
TD62594AP/PG/AFN/AFNG	DIP18/SSOP18	Single-transistor array (common emitter)	8		50	200	10.5 k	6 to 15	—
TD62595AP/PG/AF/AFG	DIP18/SOP18	Single-transistor array (common emitter)	8	○	50	200	NA	Arbitrary	—
TD62596AP/PG/AF/AFG	DIP18/SOP18	Single-transistor array (common emitter)	8	○	50	200	10.5 k + 7 V.Z.D.	14 to 25	—
TD62597AP/PG/AF/AFG /AFN/AFNG	DIP18/SOP18 SSOP18	Single-transistor array (common emitter)	8	○	50	200	2.7 k	5	—
TD62598AP/PG/AF/AFG /AFN/AFNG	DIP18/SOP18 SSOP18	Single-transistor array (common emitter)	8	○	50	200	10.5 k	6 to 15	—
TD62601P/PG/F/FG	DIP16/SOP16	Threshold-free driver (inverted output)	6		20	10	1 M	4 to 18	20
TD62602P/PG/F/FG	DIP16/SOP16	Threshold-free driver (inverted output, open-collector)	6		20	10	1 M	4 to 18	20
TD62603P/PG/F/FG	DIP16/SOP16	Threshold-free driver (non-inverted output)	6		20	10	1 M	4 to 18	20
TD62604P/PG/F/FG	DIP16/SOP16	Threshold-free driver (non-inverted output, open-collector)	6		20	10	1 M	4 to 18	20
TD62703P/PG/F/FG	DIP14/SOP14	High breakdown voltage, source driver	6		60	-50	2.7 k	5	60
TD62705P/PG/F/FG	DIP16/SOP16	High breakdown voltage, source driver	6		60	-50	47 k	6 to 15	60
TD62706P/PG/F/FG	DIP16/SOP16	High breakdown voltage, source driver	6		60	-50	10 k	5	60
TD62708N/NG	DIP24N	Darlington source driver (with Enable pin)	8		40	-1800	NA	5	7
TD62781AP/PG/AF/AFG	DIP18	Darlington source driver (with pull-down resistor)	8		60	-50	10 k	5	60
TD62782AP/PG/AF/AFG	SOP18	Darlington source driver (with pull-down resistor)	8		35	-50	20 k	6 to 15	60
TD62783AP/PG/AF/AFG /AFN/AFNG	DIP18/SOP18 SSOP18	Darlington source driver	8	○	50	-500	10 k	5	50
TD62784AP/PG/AF/AFG /AFN/AFNG	DIP18/SOP18 SSOP18	Darlington source driver	8	○	50	-500	10 k	6 to 15	50
TD62785P/PG/F/FG	DIP18/SOP18	Darlington source driver	8		7	-500	5.6-k pull-up	5	7
TD62786AP/PG/AF/AFG /AFN/AFNG	DIP18/SOP18 SSOP18	Darlington source driver	8	○	50	-500	14 k	5	50
TD62787AP/PG/AF/AFG	DIP18/SOP18	Darlington source driver	8	○	50	-500	14 k + D.	5	50

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(DMOS Arrays)

Part Number	Package	Device Type	Description	Power Supply Voltage (V)
TB62003FG/PG	SOP20/DIP20	8-bit DMOS driver	8-bit DMOS driver with inverter gate, 35 V / 200 mA	7
TB62004FG/PG	SOP20/DIP20	8-bit DMOS driver	8-bit DMOS driver with non-inverter gate, 35 V / 200 mA	7
TB62006FG/PG	SOP20/DIP20	8-bit DMOS driver	8-bit DMOS driver with NAND gate, 35 V / 200 mA	7
TB62007FG/PG	SOP20/DIP20	8-bit DMOS driver	8-bit DMOS driver with AND gate, 35 V / 200 mA	7
TB62008FG/PG	SOP20/DIP20	8-bit DMOS driver	8-bit DMOS driver with NOR gate, 35 V / 200 mA	7
TB62009FG/PG	SOP20/DIP20	8-bit DMOS driver	8-bit DMOS driver with OR gate, 35 V / 200 mA	7

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(Multi-Chip Transistor Arrays)

Part Number	Package	Device Type	Characteristics		Power Supply Voltage (V)
			Output Breakdown Voltage (V)	Output Current (A)	
TD62M4700F/FG	SSOP16	2-ch low-saturation push-pull driver	10	±2.0	10
TD62M2701F/FG	SSOP16	2-ch low-saturation push-pull driver	10	±2.0	10
TD62M2702F/FG	SSOP16	2-ch low-saturation push-pull driver	10	±2.0	10
TD62M3600F/FG	SSOP10	3-ch low-saturation source driver	-10	-2.0	-10
TD62M3601F/FG	SSOP10	3-ch low-saturation source driver	-30	-1.5	-30
TD62M3700F/FG	SSOP16	3-ch low-saturation push-pull driver	30	±1.5	30
TD62M3701F/FG	SSOP16	3-ch low-saturation push-pull driver	10	±2.0	10
TD62M3702F/FG	SSOP16	3-ch low-saturation push-pull driver	15	±2.0	15
TD62M3704F/FG	SSOP16	3-ch low-saturation push-pull driver	10	-0.4	10
TD62M4500F/FG	SSOP16	4-ch low-saturation sink driver	10	2.0	10
TD62M4501F/FG	SSOP16	4-ch low-saturation sink driver	20	2.0	20
TD62M4503AFN/AFNG	SSOP24 (0.65 mm)	4-ch PW-MOSFET sink driver diode	60	0.8	60
TD62M4600F/FG	SSOP16	4-ch low-saturation source driver	-10	-2.0	-10
TD62M4601F/FG	SSOP16	4-ch low-saturation source driver	-20	-2.0	-20
TD62M8500F/FG	HSOP16	8-ch low-saturation sink driver	10	2.0	10
TD62M8501F/FG	HSOP16	8-ch low-saturation sink driver	20	2.0	20
TD62M8600F/FG	HSOP16	8-ch low-saturation sink driver	-10	-2.0	-10
TD62M8601F/FG	HSOP16	8-ch low-saturation sink driver	-20	-2.0	-20
TD62M8603F/FG	HSOP16	8-ch low-saturation sink driver	-30	-1.5	-30
TD62M8604AF/FG	HSOP16	8-ch low-saturation sink driver	-50	-2.0	-50

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LED Driver ICs (LED Panel Drivers)

Part Number	Package	Applications	Description	Power Supply Voltage (V)
TB62702P/PG/F/FG	DIP20/SOP20	10-segment displays	10-bit DMOS sink driver (SIPO/latch), 30 V/30 mA	7
TB62705CP/CPG/CF/CFG /CFN/CFNG	DIP16/SSOP16	Small LED panels	8-bit constant-current sink driver (SIPO/latch), 17 V/90 mA	7
TB62706BN/BNG/BF/BFG	SDIP24N/SSOP24	Large LED panels	16-bit constant-current sink driver (SIPO/latch), 17 V/90 mA	7
TB62707F/FG	SSOP24	Full-color LED panels	8-bit constant-current sink driver (PIPO, latch), 17 V/90 mA	7
TB62708N/NG	SDIP30N	Large LED panels	16-bit constant-current source driver (SIPO/latch), 17 V/-90 mA	7
TB62709N/NG/F/FG	SDIP24N/SSOP24	7-segment displays	4-digit 7-segment display (common anode) decoder and constant-current driver (SIPO), 17 V/50 mA, -400 mA/digit	7
TB62710P/PG/F/FG/FN/FNG	DIP20/SSOP24/SSOP20	Small LED panels	8-bit constant-current source driver (SIPO/latch), 17 V/-90 mA	7
TB62713N/NG/F/FG	SDIP24N/SSOP24	7 x 5 dot displays	7 x 5 dot display (common cathode rows) decoder and constant-current driver (SIPO), 17 V/60 mA, -420 mA/digit	7
TB62715FN/FNG	SSOP20	Small LED panels	8-bit constant-current sink driver (SIPO/latch), 17 V/150 mA	7
TB62717FG	QFP48	Full-color LED panels	24-bit constant-current sink driver (SIPO/latch), 17 V/50 mA	7
TB62718AF/AFG	HQFP64	Full-color LED panels	256-level grayscale PWM control and current compensation, 16-bit constant-current sink driver, 26 V/80 mA	7
TB62719AF/AFG	HQFP64	Full-color LED panels	256-level grayscale PWM control and current compensation, 16-bit constant-current sink driver, 26 V/80 mA (upward compatible with the TB62718AF)	7
TB62725BP/BPG/BF/BFG /BFN/BFNG	DIP16/SSOP16/SSOP16	Small LED panels	3.3-V to 5-V drive, 8-bit constant-current sink driver (SIPO/latch), 17 V/90 mA	7
TB62726AN/ANG/AF/AFG	SDIP24N/SSOP24	Large LED panels	3.3-V to 5-V drive, 16-bit constant-current sink driver (SIPO/latch), 17 V/90 mA	7
TB62727FN/FNG	SSOP30	Full-color LED panels	16-bit constant-current sink driver with current compensation (SIPO/latch), 17 V/60 mA	7

SIPO: Serial-in parallel-out

PIPO: Parallel-in parallel-out

- The products shown in bold are manufactured in fabs in Malaysia and Thailand as well as in Japan. For overseas orders, they are shipped from the overseas fabs.
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(White LED Drivers)

Part Number	Package	Applications	Description	Power Supply Voltage (V)
TB62731FUG	6-pin SOT23	White LED backlighting	Constant-current step-up DC/DC converter (output: 320 mW, efficiency: 80%, maximum output voltage: 30 V, maximum switching current: 0.3 A)	6
TB62732FUG				
TB62733FTG *	VQON24	White LED backlighting	Charge-pump DC/DC converter (2-ch output), output current: 200 mA	6
TB62734FMG	SON8	White LED backlighting	Constant current step-up DC/DC converter, efficiency: 85% (max), output: 600 mW, (overvoltage protection)	6
TCA62735FTG *	QFN16	White LED backlighting	Charge-pump DC/DC converter and constant-current driver (4-ch), output current: 120 mA	6
TB62736FUG	6-pin SOT23	White LED backlighting	Constant-current step-up DC/DC converter, efficiency: 87% (max)	6
TB62737FUG *	6-pin SOT23	White LED backlighting	Constant-current step-up DC/DC converter, efficiency: 87% (max), (overvoltage protection)	6

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*: New product

(RGB LED Drivers)

Part Number	Package	Applications	Description	Power Supply Voltage (V)
TCA62723FMG **	SON-10	3-ch RGB LED illumination	Output: 150mA, parallel-in/parallel-out control	6
TCA62724FMG *	SON-10	3-ch RGB LED illumination	Output: 150mA, I ² C bus, support	6

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*: New product

** : Under development

CCD Clock Driver ICs

Part Number	Package	Applications	Description	Power Supply Voltage (V)
TB62801F/FG	HSOP16	CCD linear image sensor	Linear CCD clock driver	7
TB62802F/FG	HSOP16	CCD linear image sensor	Linear CCD clock driver (reduced EMI noise)	7

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Thermal Head Driver ICs

Part Number	Package	Applications	Description	Power Supply Voltage (V)
TD62C805F/FG	QFP80	48-bit TPH driver	8-bit parallel input, 6-stage shift register/latch driver (30 V / 100 mA)	7
TD62C851P/PG	DIP20	8-bit solenoid driver	8-bit shift register/latch driver (50 V / 200 mA)	7
TD62C852P/PG	DIP20	8-bit solenoid driver	8-bit shift register/latch driver (50 V / 500 mA)	7
TD62C854AF/AFG	SSOP24	8-bit LED driver	Power-On-reset, 8-bit shift register/latch driver (50 V / 500 mA)	7
TB62600F/FG	QFP100	64-bit TPH driver	8-bit parallel input, 8-stage (1-bit input, 64-stage) shift register/latch driver (30 V / 130 mA)	7

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Vending Machine Driver ICs

Part Number	Package	Applications	Description	Power Supply Voltage (V)	
TD62650F/FG	SSOP30 (1.0 mm)	Vending machines	5-V power supply and power supply monitor and 24-V communications interface IC	Power supply monitor threshold: 92% of 5 V, On-chip resistor for reset timer	7
TD62651F/FG				Power supply monitor threshold: 85% of 5 V, Requires external resistor for reset timer	7
TD62652F/FG				Power supply monitor threshold: 92% of 5 V, Requires external resistor for reset timer	7

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Other Driver ICs

Part Number	Package	Applications	Description	Power Supply Voltage (V)
TD62930P/PG/F/FG	DIP16/SSOP16 (1.0 mm)	IGBT gate driver for home appliances (inverters)	3-ch small-signal push-pull driver (30 V \pm 100 mA)	7

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Motor Drivers

Brush Motor Driver ICs (Bridge Driver ICs)

Part Number	Package	Characteristics		Description	Power Supply Voltage (V)
		Maximum Ratings			
		Io(A)	Vo(V)		
TA7257P ◆	HSIP7	4.5	25	I _{OUT} = 1.5 A (avg), 4.5 A (peak), internal diodes, 4 modes	V _{CC} =6 to 18 V _S =0 to 18
TA7267BP ◆	HSIP7	3.0	25	I _{OUT} = 1.0 A (avg), 3.0 A (peak), internal diodes, 4 modes	V _{CC} =6 to 18 V _S =0 to 18
TA7279AP/P ◆	HDIP14	3.0	AP: 25 P: 20	2 channels 4 modes, I _{OUT} = 1.0 A (avg), 3.0 A (peak), internal diodes, thermal shutdown	V _{CC} =6 to 18 V _S =0 to 16(P) V _S =0 to 18(AP)
TA7288P ◆	HSIP10	2.0	25	Sequential dual driver with V _{ref} , I _{OUT} = 1.0 A (avg), 2.0 A (peak), internal diodes, 4 modes, thermal shutdown, output pin protection, shoot-through current protection, input hysteresis	V _{CC} =4.5 to 18 V _S =0 to 18
TA8409S/SG	SIP9	1.0	25	4 modes, I _{OUT} = 0.4 A (avg), 1.0 A (peak), V _{CC} (max) = 25 V, internal diodes, thermal shutdown, standby function, input hysteresis	V _{CC} =4.5 to 20 V _S =0 to 20
TA8409F/FG	SSOP10	1.0	25		
TA7291P ◆	HSIP10	2.0	25	4 modes, I _{OUT} = 1.0 A (avg), 2.0 A (peak), internal diodes, V _{ref} , V _{CC} (max) = 25 V, thermal shutdown, output pin protection, standby function, input hysteresis	V _{CC} =4.5 to 20 V _S =0 to 20
TA7291S/SG	SIP9	1.2	25	4 modes, I _{OUT} = 0.4 A (avg), 1.2 A (peak), internal diodes, V _{ref} , V _{CC} (max) = 25 V, thermal shutdown, output pin protection, standby function, input hysteresis	V _{CC} =4.5 to 20 V _S =0 to 20
TA7291F/FG	HSOP16	1.2	25	4 modes, I _{OUT} = 0.4 A (avg), 1.2 A (peak), internal diodes, V _{ref} , V _{CC} (max) = 25 V, thermal shutdown, output pin protection, standby function, input hysteresis	V _{CC} =4.5 to 20 V _S =0 to 20
TA8428K ◆	HSIP7	3.0	30	4 modes, I _{OUT} = 1.5 A (avg), 3.0 A (peak), V _{CC} (max) = 30 V, internal diodes, thermal shutdown, overcurrent protection	7 to 27
TA8428F/FG	HSOP20	2.4	30	4 modes, I _{OUT} = 0.8 A (avg), 2.4 A (peak), V _{CC} (max) = 30 V, internal diodes, thermal shutdown, overcurrent protection	7 to 27
TA8429H/HQ	HZIP12	4.5	30	4 modes, I _{OUT} = 3.0 A (avg), 4.5 A (peak), V _{CC} (max) = 30 V, thermal shutdown, overcurrent protection, HZIP power package	V _{CC} =7 to 27 V _S =0 to 27
TA7733F/FG	SSOP16	0.5	18	Low voltage (V _{CC} (min) = 1.8 V), I _{OUT} = 0.5 A, 4 modes, wide operating voltage range, can be used as interface driver, high efficiency	1.8 to 15
TA8401F/FG	SSOP16	0.5	18	Low voltage (V _{CC} (min) = 3.0 V), I _{OUT} = 0.5 A, 4 modes, wide operating voltage range, can be used as interface driver, high efficiency	3.0 to 15
TA8440H/HQ	HZIP12	3.0	50	H 50-V bridge switch, I _{OUT} = 1.5 A (avg), 3.0 A (peak), phase-chopper pin, 4 modes, internal diodes, thermal shutdown, CMOS-compatible inputs	4.5 to 5.5
TA8496FL/FLG ☆	QON24	0.020	8	Constant-current operation, I _{OUT} = 20 mA, low-noise high-gain amp, magnetic head read/write for cameras, detection and writing of magnetic recording signals	V _{CC} =3.5 to 7 V _{BAT} =1.8 to 7
TA84007PQ *	HSIP10	2.0	30	4 modes, I _{OUT} = 1.0 A (avg), 2.0 A (peak), internal diodes, V _{ref} , V _{CC} (max) = 30 V, thermal shutdown, output pin protection, standby function, input hysteresis	4.5 to 27
TA84007SG **	SIP9	1.2	30	4 modes, I _{OUT} = 0.4 A (avg), 1.2 A (peak), internal diodes, V _{ref} , V _{CC} (max) = 30 V, thermal shutdown, output pin protection, standby function, input hysteresis	4.5 to 27
TA84007FG **	HSOP16	1.2	30	4 modes, I _{OUT} = 0.4 A (avg), 1.2 A (peak), internal diodes, V _{ref} , V _{CC} (max) = 30 V, thermal shutdown, output pin protection, standby function, input hysteresis	4.5 to 27
TB6549P/PG	DIP16	3.5	30	PWM bridge driver, I _{OUT} (max) = 3.5 A, V _{CC} (max) = 30 V, 4 modes, PWM control, standby function, thermal shutdown, overcurrent protection	10 to 27
TB6549F/FG	HSOP20	3.5	30	PWM bridge driver, I _{OUT} (max) = 3.5 A, V _{CC} (max) = 30 V, 4 modes, PWM control, standby function, thermal shutdown, overcurrent protection	10 to 27
TB6549HQ *	HZIP25	4.5	30	PWM bridge driver, I _{OUT} (max) = 4.5 A, V _{CC} (max) = 30 V, 4 modes, PWM control, standby function, thermal shutdown, overcurrent protection	10 to 27
TB62300F/FG ☆	HSOP-36-0.65	8.0	40	PWM chopper, constant-current dual DC motor driver, 40 V/8.0 A (peak), 4 modes, constant-current PWM control, standby function, thermal shutdown, overcurrent protection	4.5 to 5.5
TB6552FL/FLG ☆	QON24	1	15	2-ch PWM bridge driver, 1.5 V/0.8 A (peak), 4 modes, standby function, thermal shutdown, direct PWM control	V _{CC} =2.7 to 5.5 V _M =2.5 to 13.5
TB6552FN/FNG ☆	SSOP16	1	15	2-ch PWM bridge driver, 1.5 V/0.8 A (peak), 4 modes, standby function, thermal shutdown, direct PWM control	V _{CC} =2.7 to 5.5 V _M =2.5 to 13.5
TB6592FL/FLG ☆	QON24	0.8	6	2-ch PWM bridge driver, 6 V/0.8 A (peak), 4 modes, standby function, thermal shutdown, direct PWM control	V _{CC} =2.7 to 5.5 V _M =2.2 to 5.5
TB6555FLG * ☆	QON36	0.8	15	4-ch PWM bridge driver, 15 V/0.8 A (peak), 4 modes, standby function, thermal shutdown, direct PWM control	V _{CC} =2.7 to 5.5 V _M =2.5 to 13.5
TB6595FLG * ☆	QON36	0.8	6	4-ch PWM bridge driver, 6 V/0.8 A (peak), 4 modes, standby function, thermal shutdown, direct PWM control	V _{CC} =2.7 to 5.5 V _M =2.2 to 5.5
TB6591FL/FLG ☆	QON48	0.8	6	7-ch PWM bridge driver (6-ch full-bridge driver and 1-ch constant-current bridge driver), 6.0 V/0.8 A (peak), 4 modes, output PWM control, standby function, thermal shutdown	V _{CC} =2.7 to 5.5 V _M =2.2 to 5.5
TB6557FLG ☆	QON36	0.8	15	6-ch PWM bridge driver, 15 V/0.8 A (peak), 4 modes, standby function, thermal shutdown, direct PWM control, serial interface decoder	V _{CC} =2.7 to 5.5 V _M =2.5 to 13.5
TB6558FLG ** ☆	QON24	0.8	15	2-ch PWM chopper, constant-current driver, 15 V/0.8 A (peak), 4 modes, constant-current PWM control, standby function, thermal shutdown	V _{CC} =2.7 to 5.5 V _M =2.5 to 13.5
TB6561NG *	SDIP24	1.5	40	2-ch PWM bridge driver, 40 V/1.5 A (peak), 4 modes, V _{DD} -less, direct PWM control, standby function, thermal shutdown	10 to 36

◆: Lead(Pb)-Free

☆: Dry-packed

*: New product

** : Under development

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Brushless Motor Driver ICs (3-phase Controllers/Drivers)

Part Number	Package	Characteristics		Description	Power Supply Voltage (V)
		Maximum Ratings			
		I _O (A)	V _O (V)		
TA7712P/PG	DIP20	0.025	8	General-purpose requires, external transistors, 3-phase full-wave driver, rotation signal output, brake function	4.75 to 5.25
TA7712F/FG	SSOP24	0.025	8		
TB6539N/NG	SDIP24	0.02	18	3-phase full sine-wave current PWM controller	V _{CC} =10 to 18 V _M =4.5 to 18
TB6539F/FG	☆ SSOP30	0.02	18		
TB6551F/FG	☆ SSOP24	0.002	12	3-phase full sine-wave PWM controller	6 to 10
TB6556F/FG	☆ SSOP30	0.002	12	3-phase full sine-wave PWM controller, automatic lead angle control	6 to 10
TB6581HG	* HZIP25	2.0	500	3-phase full sine-wave PWM driver, sine-wave controller and TPD4103AK integrated in one package	V _{CC7} =6 to 10 V _{CC15} =13.5 to 16.5 V _B =50 to 400
TA7259P	◆ HDIP14	1.2	26	3-phase full-wave driver, current-controlled	7 to 18
TA7259F/FG	HSOP20	1.2	26		
TA7745P/PG	DIP16	1.0	18	3-phase full/half-wave driver, voltage-controlled, suitable for low-voltage applications	V _{CC} =4.0 to 15 V _S =2 to 15
TA7745F/FG	SSOP16	1.0	18		
TA8470AF/AFG	HSOP20	1.2	18	Low-noise drive, internal FG amp	7 to 17
TA8483CP	◆ HDIP14	2.0	35	3-phase full-wave driver, allows PWM sensorless drive with TB6520P	20 to 30
TA84005F	SSOP30	1.0	25	3-phase full-wave driver, allows PWM sensorless drive with TB6548F	V _{CC} =4.5 to 5.5 V _M =10 to 22
TA84006F	SSOP30	1.0	25	3-phase full-wave driver	V _{CC} =4.5 to 5.5 V _M =10 to 22
TA8490AF	SSOP30	1.2	16	CD-ROM spindle motor driver	V _{CC} =4.5 to 5.5 V _M =3 to 14
TA8492P/PG	DIP16	1.5	20	3-phase full-wave driver, voltage-controlled	V _{CC} =7 to 18 V _S =0 to 18
TA8493F	SSOP30	1.2	16	CD-ROM spindle motor driver, direct PWM control	V _{CC} =4.5 to 5.5 V _M =10 to 14
TA8493AF	SSOP30	1.2	16		
TA8493BF	SSOP30	1.2	16		
TA8499F	SSOP30	1.2	16	CD-ROM spindle motor driver, direct PWM control	V _{CC} =4.5 to 5.5 V _M =8 to 14
TB6520P/PG	DIP16	0.0002	7	PWM sensorless motor controller, V _{CC} = 5 V, dedicated companion to TA8483CP	4.5 to 5.5
TB6537P/PG/F/FG	DIP18/SSOP24	0.02	5.5	PWM sensorless motor controller, V _{CC} = 5 V, requires external transistor	4.5 to 5.5
TB6548F/FG	SSOP24	0.02	5.5	PWM sensorless motor controller, V _{CC} = 5 V, dedicated companion to TA84005F	4.5 to 5.5
TB6575FNG	* ☆ SSOP24 (0.65 mm)	0.02	5.5	PWM sensorless motor controller, analog speed control input, startup settings	4.5 to 5.5

◆: Lead(Pb)-Free

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(2-phase Fan Driver Controllers)

Part Number	Package	Characteristics		Description	Power Supply Voltage (V)
		Maximum Ratings			
		I _O (A)	V _O (V)		
TA8473F/FG	SSOP16	1.2	13.8	Fan motor driver, variable speed, radio noise reduction pin	6 to 13.8
TA8473FN/FNG	SSOP16 (0.65 mm)	1.2	13.8		

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Stepping Motor Driver ICs (Bipolar)

Part Number	Package	Characteristics		Description	Power Supply Voltage (V)
		Maximum Ratings			
		I _O (A)	V _O (V)		
TA8435H/HQ	HZIP25	1.5	40	Pseudo-sine-wave drive (PWM chopper), reset and monitor pins, micro-step decoder, clock input	V _{CC} =4.5 to 5.5 V _M =21.6 to 26.4
TB62201AF/AFG ☆	HSOP-36-0.65	1.5	40	Pseudo-sine-wave drive (PWM chopper), dual stepping motor driver	7
TB62202AFG ☆	HSOP-36-0.65	1.0	40	Pseudo-sine-wave drive (PWM chopper), dual stepping motor driver	7
TB62205FG ☆	HSOP-36-0.65	0.7	30	2-ch step-down DC/DC converter, pseudo-sine-wave drive (PWM chopper), V _{DD} (5 V) regulator for internal logic	7
TB62206FG	HSOP20-1.00	1.8	40	PWM chopper, phase input, 2-phase/1-2 phase excitation	7
TB62207BFG * ☆	HSOP-36-0.65	8.0	37	Pseudo-sine-wave drive (PWM chopper), dual stepping motor driver 2-ch step-down DC/DC converter, V _{DD} (5 V) regulator for internal logic	7
TB62209FG ☆	HSOP-36-0.65	1.8	40	Pseudo-sine-wave drive (PWM chopper), micro-step decoder, clock input	7
TB62217AFG * ☆	THQFP64	8.0	50	Pseudo-sine-wave drive (PWM chopper), dual stepping motor driver 3-ch step-down DC/DC converter, V _{DD} (5 V) regulator for internal logic	7
TB6504F/FG	SSOP24	0.15	18	Pseudo-sine-wave drive (PWM chopper), reset and monitor pins, micro-step decoder, clock input	V _{CC} =4.5 to 5.5 V _M =5.5 to 8.0
TB6512AF/AFG ☆	SSOP24	0.12	12	Pseudo-sine-wave drive (PWM chopper), reset and monitor pins	V _{CC} =2.7 to 5.5 V _M =4.0 to 10.0
TB6526AF/AFG	SSOP24	0.12	10	Pseudo-sine-wave drive (PWM chopper), reset and monitor pins, micro-step decoder, requires external PNP transistors	V _{CC} =2.7 to 5.5 V _M =3.5 to 8.0
TA84002F/FG	HSOP20	1.0	35	Bipolar PWM chopper, phase input, 2-phase/1-2 phase excitation	V _{CC} =4.5 to 5.5 V _M =10 to 30
TA7289P ◆	HDIP14	1.5	30	Bipolar PWM chopper, 4-bit DA converter	6 to 27
TA7289F/FG	HSOP20	0.7	30		
TA7774P/PG	DIP16	0.4	17	2-phase bipolar drive, two selectable power supply voltages	V _{CC} =4.5 to 5.5 V _{S1} =10.8 to 13.2
TA7774F/FG	HSOP16	0.4	17		
TB6598FNG ** ☆	SSOP16	0.8	15	PWM chopper, phase input, 2-phase/1-2 phase excitation	V _{CC} =2.7 to 5.5 V _M =2.5 to 13.5
TB6562ANG/AFG **	SDIP24	1.5	40	PWM chopper, phase input, 2-phase/1-2 phase excitation, V _{DD} (5 V) regulator for internal logic	10 to 34

◆: Lead(Pb)-Free

☆: Dry-packed

• The suffix (G) appended to the part number represents a Lead(Pb)-Free product. For details, please contact your nearest Toshiba sales representative.

• The suffix (O) appended to the part number indicates that the outer leads of the part are Lead(Pb)-Free-Finished. For details, please contact your nearest Toshiba sales representative.

*: New product

** : Under development

(Unipolar)

Part Number	Package	Characteristics		Description	Power Supply Voltage (V)
		Maximum Ratings			
		I _O (A)	V _O (V)		
TD62064AP/APG/AF/AFG	DIP16/HSOP16	1.5	50	Quad NPN darlington transistor array, internal clamp diodes, active-High	—
TD62064BP-1/BP1G/BF/BFG	DIP16/HSOP16	1.5	80	Quad NPN darlington transistor array, internal clamp diodes, active-High	—
TD62107P/PG	DIP16	0.75	45	Quad NPN darlington transistor array, internal clamp diodes and Enable pin	17
TD62164AP/APG/AF/AFG	DIP16/HSOP16	0.7	50	Quad NPN single transistor array, internal clamp diodes, active-High	17
TD62164BP/BPG/BF/BFG	DIP16/HSOP16	0.7	80	Quad NPN single transistor array, internal clamp diodes, active-High	17
TD62308AP/APG/AF/AFG	DIP16/HSOP16	1.5	50	Quad NPN darlington transistor array, internal clamp diodes, active-Low	10
TD62308BP-1/BP1G/BF/BFG	DIP16/HSOP16	1.5	80	Quad NPN darlington transistor array, internal clamp diodes, active-Low	10
TD62318AP/APG/AF/AFG	DIP16/HSOP16	0.7	50	Quad NPN single transistor array, internal clamp diodes, active-Low	17
TD62318BP/BPG/BF/BFG	DIP16/HSOP16	0.7	80	Quad NPN single transistor array containing 4 circuits, with clamp diode, active-Low	17

• The suffix (G) appended to the part number represents a Lead(Pb)-Free product. For details, please contact your nearest Toshiba sales representative.

(5-phase Controllers)

Part Number	Package	Characteristics		Description	Power Supply Voltage (V)
		Maximum Ratings			
		I _O (A)	V _O (V)		
TB6528P ◆	DIP24	0.03	20	5-phase universal controller	4 to 16

◆: Lead(Pb)-Free

Power Supply ICs

Point Regulators (LDO Regulators)

Point regulators are so small they can be locally assigned to individual circuit blocks, making them suitable for applications requiring low dropout. These devices incorporate an ON/OFF control function, which facilitates power management.

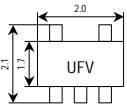
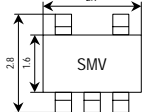
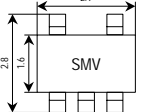
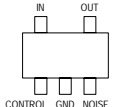
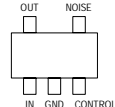
< Features >

- Small package
- Low saturation voltage
- Low noise
- High ripple rejection
- ON/OFF control function
- Overtemperature and overcurrent protection
- Capable of using a ceramic capacitor

< Low-Dropout Voltage Regulator Series >



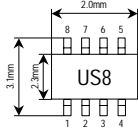
(Single Output Type)

Output Voltage (V)	Part Number			Ratings	
	 (mm)	 (mm)	 (mm)	Output Current (mA)	Power Dissipation ★ (mW)
1.5	TAR5S15U	TAR5S15	TAR5SB15	200	450 (UFV)
1.6	TAR5S16U	TAR5S16	TAR5SB16		
1.7	TAR5S17U	TAR5S17	TAR5SB17		
1.8	TAR5S18U	TAR5S18	TAR5SB18		
1.9	TAR5S19U	TAR5S19	TAR5SB19		
2.0	TAR5S20U	TAR5S20	TAR5SB20		
2.1	TAR5S21U	TAR5S21	TAR5SB21		
2.2	TAR5S22U	TAR5S22	TAR5SB22		
2.3	TAR5S23U	TAR5S23	TAR5SB23		
2.4	TAR5S24U	TAR5S24	TAR5SB24		
2.5	TAR5S25U	TAR5S25	TAR5SB25		
2.6	TAR5S26U	TAR5S26	TAR5SB26		
2.7	TAR5S27U	TAR5S27	TAR5SB27		
2.8	TAR5S28U	TAR5S28	TAR5SB28		
2.9	TAR5S29U	TAR5S29	TAR5SB29		
3.0	TAR5S30U	TAR5S30	TAR5SB30		
3.1	TAR5S31U	TAR5S31	TAR5SB31		
3.2	TAR5S32U	TAR5S32	TAR5SB32		
3.3	TAR5S33U	TAR5S33	TAR5SB33		
3.4	TAR5S34U	TAR5S34	TAR5SB34		
3.5	TAR5S35U	TAR5S35	TAR5SB35		
3.6	TAR5S36U	TAR5S36	TAR5SB36		
3.7	TAR5S37U	TAR5S37	TAR5SB37		
3.8	TAR5S38U	TAR5S38	TAR5SB38		
3.9	TAR5S39U	TAR5S39	TAR5SB39		
4.0	TAR5S40U	TAR5S40	TAR5SB40		
4.1	TAR5S41U	TAR5S41	TAR5SB41		
4.2	TAR5S42U	TAR5S42	TAR5SB42		
4.3	TAR5S43U	TAR5S43	TAR5SB43		
4.4	TAR5S44U	TAR5S44	TAR5SB44		
4.5	TAR5S45U	TAR5S45	TAR5SB45		
4.6	TAR5S46U	TAR5S46	TAR5SB46		
4.7	TAR5S47U	TAR5S47	TAR5SB47		
4.8	TAR5S48U	TAR5S48	TAR5SB48		
4.9	TAR5S49U	TAR5S49	TAR5SB49		
5.0	TAR5S50U	TAR5S50	TAR5SB50		
Pin Configuration					

★: A result of an evaluation on a glass-epoxy board (30 mm x 30 mm), Ta = 25°C

• Please ask your local retailer about the devices with other output voltages.

(Dual Output Type)

Part Number		Package	Description	Characteristics						
				Output Voltage (V)	Output Current (mA)	Power Dissipation ★	Internal Connections			
TAR8H01K	Ach		Synchronous switch type	2.8	100	400	1. CONTROL 2. Noise(A) 3. Noise(B) 4. GND 5. Vout(B) 6. Vin(B) 7. Vin(A) 8. Vout(A)			
	Bch			3.0	150					
TAR8H02K	Ach			2.8	100					
	Bch			2.8	150					
TAR8H03K	Ach			2.5	100					
	Bch			2.8	150					
TAR8H04K	Ach			2.5	100					
	Bch			3.0	150					
TAR8H05K	Ach			1.8	100					
	Bch			2.8	150					
TAR8H06K	Ach			1.5	100					
	Bch			2.5	150					
TAR8D01K	Ach			Independent control type	2.5			100	400	1. Noise(A) 2. Noise(B) 3. CONTROL(A) 4. GND 5. CONTROL(B) 6. Vout(B) 7. Vin 8. Vout(A)
	Bch				2.8					
TAR8D02K	Ach		2.0							
	Bch		2.8							
TAR8D03K	Ach		2.8							
	Bch		3.0							
TAR8D04K	Ach		1.5							
	Bch		1.5							
TAR8D05K	Ach		2.8							
	Bch		2.8							
TAR8D06K	Ach		2.9							
	Bch		2.9							
TAR8D07K	Ach	3.0								
	Bch	3.0								
TAR8D08K	Ach	2.8								
	Bch	2.85								

★: A result of an evaluation on a glass-epoxy board (30 mm x 30 mm), Ta = 25°C

- Dual-output LDO regulators allow for semi-customization of individual output voltage, which can be 1.5 V to 5.0 V at 0.1-V intervals.

Series Regulators

Part Number	Package	Polarity	Features	Electrical Characteristics							Equivalent						
				Output Voltage Typ. (V)	Output Current Max (mA)	Input Voltage Max (V)	Dropout Voltage Typ. (V)	Bias Current Typ. (mA)	Output Voltage Tolerance (%)	Power Dissipation (W)							
TA7805F TA78057F TA7806F TA7807F TA7808F TA7809F TA7810F TA7812F TA7815F TA7818F TA7820F TA7824F	PW-Mold	Positive-voltage output	High-current output Note: Surface-mount PW-Mold package	5	1000	35	2.0 (I _o = 1000 mA)	4.2	±4 (T _j = 25°C)	1.0 (T _a = 25°C) 10 (T _c = 25°C)	78XX						
5.7																	
6																	
7																	
8																	
9																	
10																	
12																	
15																	
18																	
20																	
24																	
				High-current output Isolation package	5	1000	35	2.0 (I _o = 1000 mA)	4.2	±4 (T _j = 25°C)		2.0 (T _a = 25°C) 20 (T _c = 25°C)	78XX				
5.7																	
6																	
7																	
8																	
9																	
10																	
12																	
15																	
18																	
20																	
24																	
			High-current output Note: Ammo packaging for automated pick-and-place assembly	5	1000	35	2.0 (I _o = 1000 mA)	4.2	±4 (T _j = 25°C)	1.8 (T _a = 25°C)	78XX						
5.7																	
6																	
7																	
8																	
9																	
10																	
12																	
15																	
18																	
20																	
24																	
			High-current output Note: Surface-mount PW-Mold package	3.3	1000	20	2.0 (I _o = 1000 mA)	3.0	±3 (T _j = 25°C)	1.0 (T _a = 25°C) 10 (T _c = 25°C)	78XX						
4																	
5																	
7																	
8																	
9																	
			High-current output Isolation package	3.3	1000	20	2.0 (I _o = 1000 mA)	3.0	±3 (T _j = 25°C)	2.0 (T _a = 25°C) 15 (T _c = 25°C)	78XX						
4																	
5																	
7																	
8																	
9																	
			Medium-current output Note: Surface-mount PW-Mold package	5	500	35	1.7 (I _o = 350 mA)	4.5	±4 (T _j = 25°C)	1.0 (T _a = 25°C) 10 (T _c = 25°C)	78MXX						
6																	
8																	
9																	
10																	
12																	
15																	
18																	
20																	
24																	
				Medium-current output Note: Surface-mount PW-Mold package		5		500				40	1.7 (I _o = 350 mA)	4.6	±4 (T _j = 25°C)	1.0 (T _a = 25°C) 10 (T _c = 25°C)	78MXX
6																	
8																	
9																	
10																	
12																	
15																	
18																	
20																	
24																	

• The products shown in bold are also manufactured in offshore fabs.

Part Number	Package	Polarity	Features	Electrical Characteristics							Equivalent
				Output Voltage Typ. (V)	Output Current Max (mA)	Input Voltage Max (V)	Dropout Voltage Typ. (V)	Bias Current Typ. (mA)	Output Voltage Tolerance (%)	Power Dissipation (W)	
TA78M05S TA78M06S TA78M08S TA78M09S TA78M10S TA78M12S TA78M15S TA78M18S TA78M20S TA78M24S	TO-220NIS	Positive-voltage output	Medium-current output Isolation package	5 6 8 9 10 12 15 18 20 24	500	35	1.7 (I _o = 350 mA)	4.5 4.6 4.7 4.8	±4 (T _j = 25°C)	2.0 (T _a = 25°C) 20 (T _c = 25°C)	78MXX
TA78M05SB TA78M06SB TA78M08SB TA78M09SB TA78M10SB TA78M12SB TA78M15SB TA78M18SB TA78M20SB TA78M24SB	TPL		Medium-current output Note: Ammo packaging for automated pick-and-place assembly	5 6 8 9 10 12 15 18 20 24				500			
TA78L005AP ◆ TA78L006AP ◆ TA78L007AP ◆ TA78L075AP ◆ TA78L008AP ◆ TA78L009AP ◆ TA78L010AP ◆ TA78L012AP ◆ TA78L132AP ◆ TA78L015AP ◆ TA78L018AP ◆ TA78L020AP ◆ TA78L024AP ◆	LSTM		Low-current output Note: Ammo packaging for automated pick-and-place assembly	5 6 7 7.5 8 9 10 12 13.2 15 18 20 24	150	35	1.7 (I _o = 150 mA)		3.1 3.2 3.3 3.5	±4 (T _j = 25°C)	0.8 (T _a = 25°C)
TA78L05F ◆ TA78L06F ◆ TA78L07F ◆ TA78L08F ◆ TA78L09F ◆ TA78L10F ◆ TA78L12F ◆ TA78L15F ◆ TA78L18F ◆ TA78L20F ◆ TA78L24F ◆	PW-Mini (SOT-89)		Low-current output Note: Surface-mount PW-Mini (SOT-89) package	5 6 7 8 9 10 12 15 18 20 24				150	35		
TA78L05PF ◆ TA78L06PF ◆ TA78L07PF ◆ TA78L08PF ◆ TA78L09PF ◆ TA78L10PF ◆ TA78L12PF ◆ TA78L15PF ◆	PS-8		Low-current output Note: Small, thin surface-mount PS-8 package	5 6 7 8 9 10 12 15	150	35	2.0 (I _o = 150 mA)			3.1 3.2	±4 (T _j = 25°C)
TA78L05S TA78L07S TA78L08S TA78L09S TA78L10S TA78L12S TA78L15S	TO-92		Low-current output Note: Ammo packaging for automated pick-and-place assembly	5 7 8 9 10 12 15				100	35	1.7 (I _o = 100 mA)	

◆: Lead(Pb)-Free

• The products shown in bold are also manufactured in offshore fabs.

Series Regulators (Continued)

Part Number	Package	Polarity	Features	Electrical Characteristics							Equivalent
				Output Voltage Typ. (V)	Output Current Max (mA)	Input Voltage Max (V)	Dropout Voltage Typ. (V)	Bias Current Typ. (mA)	Output Voltage Tolerance (%)	Power Dissipation (W)	
TA48015F TA48018F TA4802F TA48025F TA4803F TA48033F TA4805F	PW-Mold	Positive-voltage output (low dropout)	High-current output Low dropout Note: Surface-mount PW-Mold package	1.5 1.8 2 2.5 3 3.3 5	1000	16	0.8 max 0.5 max (I _o = 500 mA)	0.8 (I _o = 0 A)	±4.5 (T _J = 0 to 125°C)	1.0 (T _a = 25°C) 10 (T _c = 25°C)	
TA48018S TA4802S TA48025S TA4803S TA48033S TA4805S	TO-220NIS		High-current output Low dropout Isolation package	1.8 2 2.5 3 3.3 5	1000	16	0.5 max (I _o = 500 mA)	0.8 (I _o = 0 A)	±4.5 (T _J = 0 to 125°C)	2.0 (T _a = 25°C) 20 (T _c = 25°C)	
TA48015AF TA48018AF TA48025AF TA48033AF TA4805AF TA4809AF	PW-Mold		High-current output Low dropout Note: Surface-mount PW-Mold package	1.5 1.8 2.5 3.3 5 9	1000	16	0.8 max 0.5 max (I _o = 500 mA)	0.85 (I _o = 0 A)	±4 (T _J = 0 to 125°C)	1.0 (T _a = 25°C) 10 (T _c = 25°C)	
TA48015AS TA48018AS TA48025AS TA48033AS TA4805AS TA4809AS	TO-220NIS		High-current output Low dropout Isolation package	1.5 1.8 2.5 3.3 5 9	1000	16	1.1 max 0.5 max (I _o = 500 mA)	0.85 (I _o = 0 A)	±4 (T _J = 0 to 125°C)	2.0 (T _a = 25°C) 20 (T _c = 25°C)	
TA48M025F TA48M03F TA48M033F TA48M0345F TA48M04F TA48M05F	PW-Mold		Medium-current output Low dropout Note: Surface-mount PW-Mold package	2.5 3 3.3 3.45 4 5	500	29	0.65 max (I _o = 500 mA)	0.8 0.9 1.0 (I _o = 0 A)	±5 (T _J = 0 to 125°C)	1.0 (T _a = 25°C) 10 (T _c = 25°C)	
TA78DM05S TA78DM08S TA78DM09S TA78DM12S	TO-220NIS		Medium-current output Low dropout Isolation package	5 8 9 12	500	29 (load dump = 60 V)	0.75 max (I _o = 500 mA)	0.8 0.9 1.0 (I _o = 0 A)	±6 (T _J = 25°C)	2.0 (T _a = 25°C) 20 (T _c = 25°C)	
TA58L05F TA58L06F TA58L08F TA58L09F TA58L10F TA58L12F TA58L15F	PW-Mold		Medium-current output Low dropout Note: Surface-mount PW-Mold package	5 6 8 9 10 12 15	250	29 (load dump = 60 V)	0.4 max (I _o = 200 mA)	0.45 0.5 0.55 0.6 0.65 0.75 (I _o = 0 A)	±4 (T _a = -40 to 105°C)	1.0 (T _a = 25°C) 10 (T _c = 25°C)	
TA58L05S TA58L06S TA58L08S TA58L09S TA58L10S TA58L12S TA58L15S	TO-220NIS		Medium-current output Low dropout Isolation package	5 6 8 9 10 12 15	250	29 (load dump = 60 V)	0.4 max (I _o = 200 mA)	0.45 0.5 0.55 0.6 0.65 0.75 (I _o = 0 A)	±4 (T _a = -40 to 105°C)	2.0 (T _a = 25°C) 20 (T _c = 25°C)	
TA58M05F ** TA58M06F ** TA58M08F ** TA58M09F ** TA58M10F ** TA58M12F ** TA58M15F **	PW-Mold		Medium-current output Low dropout Isolation package	5 6 8 9 10 12 15	500	29 (load dump = 60 V)	0.65 max (I _o = 500 mA)	1 max (I _o = 0 A) 1.2 max 1.4 max	±4 (T _a = -40 to 105°C)	1.0 (T _a = 25°C) 10 (T _c = 10°C)	

** : Under development

Part Number	Package	Polarity	Features	Electrical Characteristics							Equivalent
				Output Voltage Typ. (V)	Output Current Max (mA)	Input Voltage Max (V)	Dropout Voltage Typ. (V)	Bias Current Typ. (mA)	Output Voltage Tolerance (%)	Power Dissipation (W)	
TA58M05S TA58M06S TA58M08S TA58M09S TA58M10S TA58M12S TA58M15S	TO-220NIS	Positive-voltage output (low dropout)	Medium-current output Low dropout Isolation package	5 6 8 9 10 12 15	500	29 (load dump = 60 V)	0.65 max (I _o = 500 mA)	1 max (I _o = 0 A) 1.2 max (I _o = 0 A) 1.4 max (I _o = 0 A)	±4 (T _a = -40 to 105°C)	2.0 (T _a = 25°C) 20 (T _c = 25°C)	
TA48L018F TA48L02F TA48L025F TA48L03F TA48L033F TA48L05F	PW-Mini (SOT-89)		Low-current output Low dropout Note: Surface-mount PW-Mini (SOT-89) package	1.8 2 2.5 3 3.3 5	150	16	0.5 max (I _o = 100 mA)	0.4 (I _o = 0 A)	±5 (T _J = 0 to 125°C)	0.5 (T _a = 25°C)	
TA78DS05BP TA78DS05CP TA78DS06BP TA78DS08BP TA78DS09BP TA78DS10BP TA78DS12BP TA78DS15BP	LSTM		Low-current output Low dropout Note: Ammo packaging for automated pick-and-place assembly	5 5 6 8 9 10 12 15	30	29 (load dump = 60 V)	0.3 max (I _o = 10 mA)	0.6 0.7 0.8 1.0 (I _o = 0 A)	BP: ±10 CP: ±5 (T _a = -40 to 85°C)	0.8 (T _a = 25°C)	
TA78DS05F TA78DS05AF TA78DS06F TA78DS08F TA78DS09F TA78DS10F TA78DS12F TA78DS15F	PW-Mini (SOT-89)		Low-current output Low dropout Note: Surface-mount PW-Mini (SOT-89) package	5 5 6 8 9 10 12 15	30	29 (load dump = 60 V)	0.3 max (I _o = 10 mA)	0.6 0.7 0.8 1.0 (I _o = 0 A)	F: ±10 AF: ±5 (T _a = -40 to 85°C)	0.5 (T _a = 25°C)	

◆: Lead(Pb)-Free

** : Under development

Series Regulators (Continued)

Part Number	Package	Polarity	Features	Electrical Characteristics							Equivalent
				Output Voltage Typ. (V)	Output Current Max (mA)	Input Voltage Max (V)	Dropout Voltage Typ. (V)	Bias Current Typ. (mA)	Output Voltage Tolerance (%)	Power Dissipation (W)	
TA79005S TA79006S TA79007S TA79008S TA79009S TA79010S TA79012S TA79015S TA79018S TA79020S TA79024S	TO-220NIS	Negative-voltage output	High-current output Isolation package	-5 -6 -7 -8 -9 -10 -12 -15 -18 -20 -24	1000	-35 -40	2.0 (I _o = 1.0 A)	4.3 4.4 4.5 4.6	±4 (T _j = 25°C)	2.0 (T _a = 25°C) 20 (T _c = 25°C)	79XX
TA79005SB TA79006SB TA79007SB TA79008SB TA79009SB TA79010SB TA79012SB TA79015SB TA79018SB TA79020SB TA79024SB	TPL		High-current output Note: Ammo packaging for automated pick-and-place assembly	-5 -6 -7 -8 -9 -10 -12 -15 -18 -20 -24	1000	-35 -40	2.0 (I _o = 1.0 A)	4.3 4.4 4.5 4.6	±4 (T _j = 25°C)	1.8 (T _a = 25°C)	79XX
TA79L05F ◆ TA79L06F ◆ TA79L08F ◆ TA79L09F ◆ TA79L10F ◆ TA79L12F ◆ TA79L15F ◆ TA79L18F ◆ TA79L20F ◆ TA79L24F ◆	PW-Mini (SOT-89)		Low-current output Note: Surface-mount PW-Mini (SOT-89) package	-5 -6 -8 -9 -10 -12 -15 -18 -20 -24	150	-35 -40	1.7 (I _o = 40 mA)	3.1 3.2 3.3 3.5	±4 (T _j = 25°C)	0.5 (T _a = 25°C)	79LXX
TA79L005P ◆ TA79L006P ◆ TA79L008P ◆ TA79L009P ◆ TA79L010P ◆ TA79L012P ◆ TA79L015P ◆ TA79L018P ◆ TA79L020P ◆ TA79L024P ◆	LSTM		Low-current output Note: Ammo packaging for automated pick-and-place assembly	-5 -6 -8 -9 -10 -12 -15 -18 -20 -24	150	-35 -40	1.7 (I _o = 40 mA)	3.1 3.2 3.3 3.5	±4 (T _j = 25°C)	0.8 (T _a = 25°C)	79LXX

◆: Lead(Pb)-Free

• The products shown in bold are also manufactured in offshore fabs.

Shunt Regulators

Part Number	Package	Polarity	Features	Electrical Characteristics							Equivalent
				Reference Voltage Typ. (V)	Output Voltage Typ. (V)	Cathode Current Max (mA)	Cathode Voltage Max (V)	Minimum Cathode Current Max (mA)	Reference Voltage Tolerance (%)	Power Dissipation (W)	
TA76431F/FR ◆	PW-Mini (SOT-89)	Positive-voltage output	Variable output voltage Note: Surface-mount PW-Mini (SOT-89) package	2.495	Variable 2.495 to 36	Sink 150	37	1.0	±2.2 (Ta = 25°C)	0.5 (Ta = 25°C)	431
TA76431S ◆	LSTM		Variable output voltage Note: Ammo packaging for automated pick-and-place assembly							0.8 (Ta = 25°C)	431
TA76L431FT ◆	UFV		Variable output voltage Note: Small, thin surface-mount UFV package	2.49	Variable 2.49 to 19	Sink 50	20	0.5	±1.0 (Ta = 25°C)	0.45 (Ta = 25°C) Mounted on a glass-epoxy board	431
TA76L431S	LSTM		Variable output voltage Note: Ammo packaging for automated pick-and-place assembly							0.8 (Ta = 25°C)	431
TA76432FT ◆ TA76432AFT ◆	UFV		Variable output voltage Note: Small, thin surface-mount UFV package	1.26	Variable 1.26 to 19	Sink 20	20	0.4	±1.4 A: ±1.0 (Ta = 25°C)	0.45 (Ta = 25°C) Mounted on a glass-epoxy board	
TA76432FC ◆	SMV		Variable output voltage Note: Surface-mount SMV package							0.38 (Ta = 25°C) Mounted on a glass-epoxy board	
TA76432F/FR ◆ TA76432AF/AFR ◆	PW-Mini (SOT-89)		Variable output voltage Note: Surface-mount PW-Mini (SOT-89) package							0.5 (Ta = 25°C)	
TA76432S ◆ TA76432AS ◆	LSTM		Variable output voltage Note: Ammo packaging for automated pick-and-place assembly							0.8 (Ta = 25°C)	
TA76433FC ◆	SMV		Cathode separation type Variable output voltage Note: Surface-mount SMV package	1.26	Variable 1.26 to 14	Sink 20	15	0.4	±1.4 (Ta = 25°C)	0.38 (Ta = 25°C) Mounted on a glass-epoxy board	

◆ : Lead(Pb)-Free

• The products shown in bold are also manufactured in offshore fabs.

Multi-Functional Regulators

Part Number	Package	Polarity	Features	Electrical Characteristics						Equivalent	
				Output Voltage Typ. (V)	Output Current Max (mA)	Input Voltage Max (V)	Dropout Voltage Typ. (V)	Bias Current Typ. (mA)	Output Voltage Tolerance (%)		Power Dissipation (W)
TA48S018F TA48S02F TA48S025F TA48S03F TA48S033F TA48S05F	5-pin PW-Mold	Positive-voltage output (low dropout)	High-current output Low dropout	1.8 2	1000	16	0.5 max (Io = 500 mA)	0.8 (Io = 0 A)	±4.5 (Tj = 0 to 125°C)	1.0 (Ta = 25°C) 10 (Tc = 25°C)	
TA58MS05F ** TA58MS06F ** TA58MS08F ** TA58MS09F ** TA58MS12F **			Medium-current output Low dropout Built-in ON/OFF control function Bias current (OFF): 5 µA Max Note: Surface-mount 5-pin PW-Mold package	5 6 8 9 12							
TA8004SA	5-pin TO-220NIS		Medium-current output Built-in power-on reset timer function Low dropout	5	400	29 (load dump = 60 V)	0.6 max (Io = 400 mA)	3.0 (Io = 0 A)	±5 (Ta = -40 to 85°C)	2.0 (Ta = 25°C) 20 (Tc = 25°C)	

** : Under development

AC-DC Converter ICs

Part Number	Package	Applications	Description	Power Supply Voltage (V)
TA1294N/NG/F/FG	P-SDIP24-300-1.78 P-SSOP24-300-1.78	AC/DC switching power supply control	Power factor correction and PWM control, $f_{\text{H}} = 30 \text{ kHz to } 110 \text{ kHz}$ Can be used for both flyback (external synchronization) and half-bridge converters.	7.0 to 14.0
TA1307P/PG	P-DIP8-300-2.54A		Reduced standby power consumption by intermittent control, $f_{\text{H}} = 20 \text{ kHz to } 150 \text{ kHz}$	7.5 to 11.5
TA1319AP/APG/AF/AFG	P-DIP8-300-2.54A P-SOP8-225-1.27		PWM control (for power supply of 50 W or less), AC wide input voltage range, automatic frequency reduction in standby mode	9.5 to 24.0
TC90A75P/PG/F/FG	DIP8-C-300A DIP8-F-255C		AC transformer control, minimal standby power consumption by intermittent control	8.5 to 14.0

- The suffix (G) appended to the part number represents a Lead(Pb)-Free product. For details, please contact your nearest Toshiba sales representative.

Other Power Supply ICs

Part Number	Package	Applications	Description	Power Supply Voltage (V)
TB62501F/FG	VQFP64	Power supply monitor and controller for notebook PCs	Power management IC for notebook PCs	—
TB62506FG *	TQFP64	Power supply monitor and controller for notebook PCs	Power management IC for notebook PCs	—
TB62503FM/FMG	SON8	System power supply for cell phone PAs	Step-down DC/DC converter, 1.3-V output, efficiency = 85%	2.8 to 5.5
TB62504FMG	SON8	System power supply for cell phone PAs	Step-down DC/DC converter (variable output) and switching MOSFETs, 300-mA output current capability	2.8 to 5.5
TB62505 **	TBD	System power supply for cell phone PAs	Step-down DC/DC converter (variable output) + switching MOSFETs, 500-mA output current capability and regulator output (2.9 V)	2.8 to 5.5

- The suffix (G) appended to the part number represents a Lead(Pb)-Free product. For details, please contact your nearest Toshiba sales representative.

*: New product

** : Under development

Small-Signal MMICs (Radio-Frequency Cell Packs)

Wideband Amp ICs

Part Number	Package	Applications	Functions	Electrical Characteristics	Supply Voltage (V)
TA4000F	SM6	BS tuners, communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 1.3 GHz G _p = 15dB @f = 500 MHz, V _{CC} = 5 V	5.0
TA4001F	SMQ	BS tuners, communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 2.4 GHz G _p = 12.5dB @f = 500 MHz, V _{CC} = 5 V	5.0
TA4002F	SMQ	BS tuners, communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 1.3 GHz G _p = 23dB @f = 500 MHz, V _{CC} = 5 V	5.0
TA4004F	SMV	BS tuners, communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 1.2 GHz G _p = 10.5dB @f = 500 MHz, V _{CC} = 2 V	2.0 to 5.0
TA4011AFE	ESV	Communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 2.4 GHz, P _{01dB} = -6dBmW @V _{CC} = 2 V	2.0
TA4011FU	USV	Communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 2.4 GHz, P _{01dB} = -6dBmW @V _{CC} = 2 V	2.0
TA4012AFE	ESV	Communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 2.0 GHz, P _{01dB} = 0dBmW @V _{CC} = 2 V	2.0
TA4012FU	USV	Communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 2.0 GHz, P _{01dB} = 0dBmW @V _{CC} = 2 V	2.0
TA4016AFE	ES6	Communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 3.2 GHz G _p = 19dB @f = 1.5 GHz, V _{CC} = 2 V	2.0
TA4017FT	TU6	CATV, IF amps	Bipolar differential amp	S ₂₁ ² = 13dB, P _{01dB} = 2dBmW @V _{CC} = 5 V, f = 45 MHz	5.0
TA4018F	SM8	CATV, IF variable amps	Bipolar differential gain control amp	S ₂₁ ² = 11dB, G _R = 37dB @V _{CC} = 5 V, f = 45 MHz	5.0
TA4019F	SM8	CATV, IF amps	Bipolar differential amp	S ₂₁ ² = 30dB, IM3 = 53dB @V _{CC} = 5 V, f = 45 MHz, P _{in} = -35dBmW	5.0

Frequency Converters

Part Number	Package	Applications	Functions	Electrical Characteristics	Supply Voltage (V)
TA4107F	SM8	CATV analog digital tuner	Bipolar linear down-converter	C • Gain = -0.5dB, IIP3 = 12dBmW @f _{RF} = 1 GHz, f _{LO} = 950 MHz, V _{CC} = 4.5 V	4.5
TA4303F	SSOP-20	BS tuner OSC + DBC + IF	Bipolar linear down-converter, Si-MMIC	C • Gain = 18dB/1.6 GHz, IP3 = 17dBmW V _{CC} = 5 V, I _{CC} = 74 mA	5.0

Radio-Frequency Oscillators (VCOs, TCXOs)

Part Number	Package	Applications	Functions	Electrical Characteristics	Supply Voltage (V)
TA4014FT	TU6	TCXO VCXO	Bipolar linear OSC & buffer	I _{CC} = 1.2 mA @V _{CC} = 3.0 V V _{OSC} = 1.2 V _{p-p} (reference value)	3.0
TA4014FE	ES6	TCXO VCXO	Bipolar linear OSC & buffer		3.0
TA4014FC	CS6	TCXO VCXO	Bipolar linear OSC & buffer		3.0
TA4015FT	TU6	TCXO VCXO	Bipolar linear OSC & buffer	I _{CC} = 1.3 mA @V _{CC} = 3.0 V V _{OSC} = 1.2 V _{p-p} (reference value)	3.0
TA4015FE	ES6	TCXO VCXO	Bipolar linear OSC & buffer		3.0

Radio-Frequency Switches

Part Number	Package	Functions	Applications	Electrical Characteristics	Supply Voltage (V)	
					VDD	Vc
TG2210FT	TU6	SPDT switch	General-purpose RF switch, receiver antenna switch	Loss = 0.4dB (typ.), ISL = 30dB (typ.) P1dB = 18dBm (min) @f = 1 GHz, Vc = 0 V/2.5 V	—	0/2.5
TG2211AFT *	TU6	SPDT switch and inverter	General-purpose RF switch, receiver antenna switch	Loss = 0.5dB (typ.), ISL = 30dB (typ.) P1dB = 17dBm (min) @f = 2 GHz, VDD/Vc(H) = 2.7 V/2.7 V	2.7	0/2.7
TG2213S	sES6	Small SPDT switch	General-purpose RF switch, receiver antenna switch	Loss = 0.45dB (typ.), ISL = 24dB (typ.) P1dB = 12dBm (min) @f = 2.5 GHz, Vc = 0 V/2.7 V	—	0/2.7
TG2214S	sES6	Small SPDT switch, Inverted output of TG2213S	General-purpose RF switch, receiver antenna switch	Loss = 0.45dB (typ.), ISL = 24dB (typ.) P1dB = 12dBm (min) @f = 2.5 GHz, Vc = 0 V/2.7 V	—	0/2.7
TG2216TU	UF6	Medium-power SPDT switch	General-purpose RF switch, PHS, Bluetooth, 2.4-G wireless LAN antenna switch	Loss = 0.7dB (typ.), ISL = 23dB (typ.) P1dB = 25dBm (min) @f = 2.5 GHz, Vc = 0 V/2.7 V	—	0/2.7
TG2217CTB *	CST6B	Ultra-small SPDT switch	General-purpose RF switch, receiver antenna switch	Loss = 0.45dB (typ.), ISL = 22dB (typ.) P1dB = 14dBm (min) @f = 2.5 GHz, Vc = 0 V/2.6 V	—	0/2.6

*: New product