



2SJ683 — P-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Load S/W Applications.
- Avalanche resistance guarantee.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-60	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		-65	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-260	A
Allowable Power Dissipation	P _D	Tc=25°C	50	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E _{AS}		400	mJ
Avalanche Current *2	I _{AV}		-65	A

Note : *1 V_{DD}=-30V, L=100μH, I_{AV}=-65A

*2 L≤100μH, Single pulse

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =-1mA, V _{GS} =0V	-60			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V, V _{GS} =0V			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} = ±16V, V _{DS} =0V			±10	μA

Marking : J683

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2SJ683

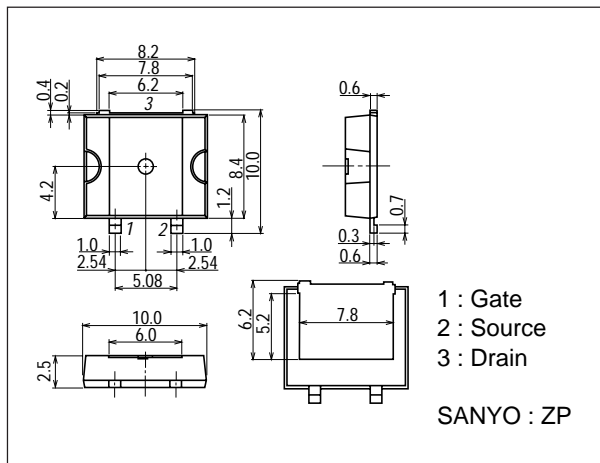
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10V, I_D=-1mA$	-1.2		-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10V, I_D=-33A$	39	65		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-33A, V_{GS}=-10V$		8.0	10.5	$m\Omega$
	$R_{DS(on)2}$	$I_D=-33A, V_{GS}=-4V$		10.5	15	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=-20V, f=1MHz$		15500		pF
Output Capacitance	C_{oss}	$V_{DS}=-20V, f=1MHz$		1000		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-20V, f=1MHz$		800		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		110		ns
Rise Time	t_r	See specified Test Circuit.		620		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		900		ns
Fall Time	t_f	See specified Test Circuit.		580		ns
Total Gate Charge	Q_g	$V_{DS}=-30V, V_{GS}=-10V, I_D=-65A$		290		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-30V, V_{GS}=-10V, I_D=-65A$		50		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-30V, V_{GS}=-10V, I_D=-65A$		50		nC
Diode Forward Voltage	V_{SD}	$I_S=-65A, V_{GS}=0V$		-0.9	-1.5	V

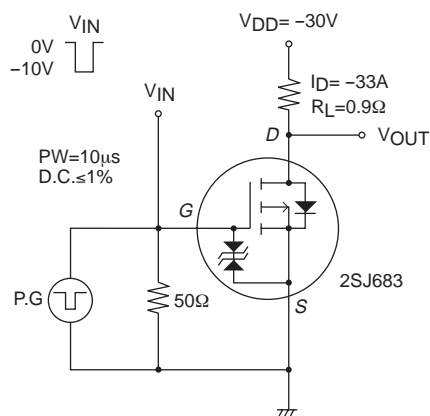
Package Dimensions

unit : mm (typ)

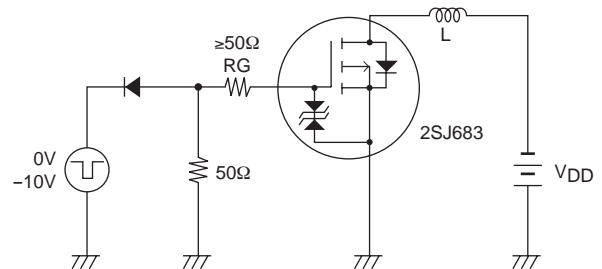
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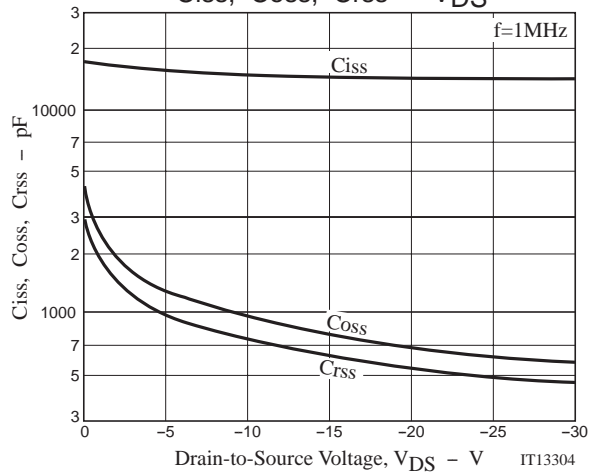
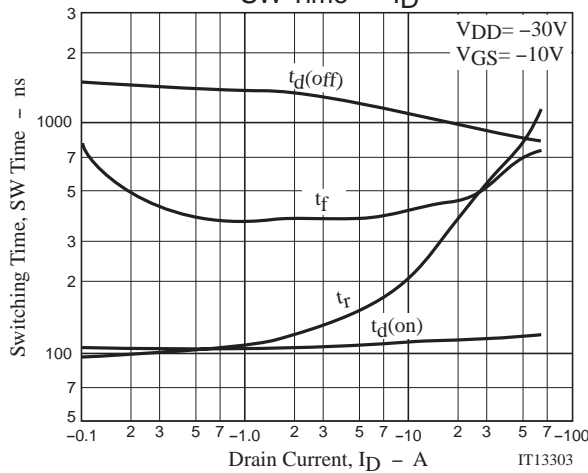
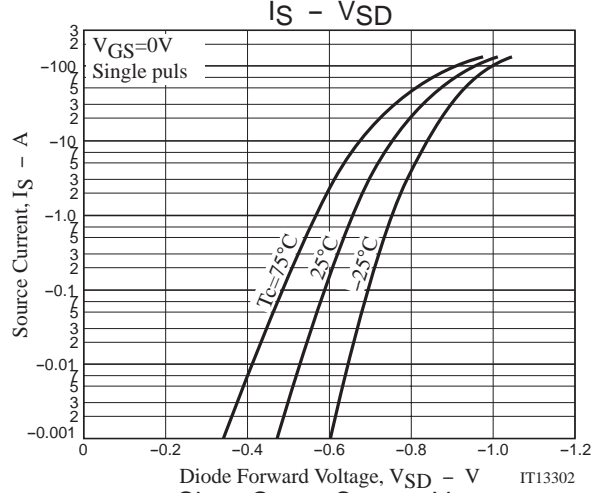
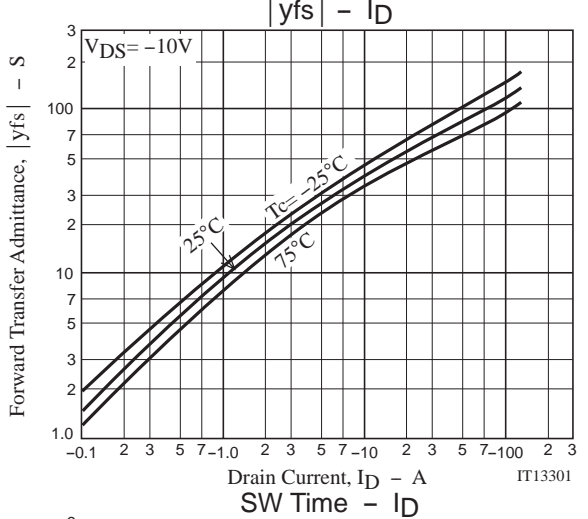
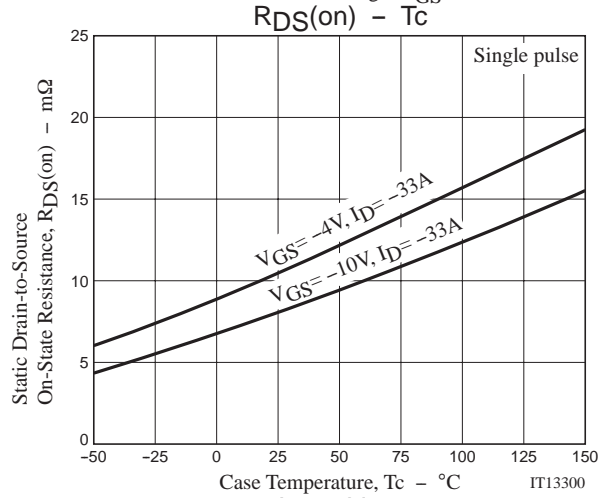
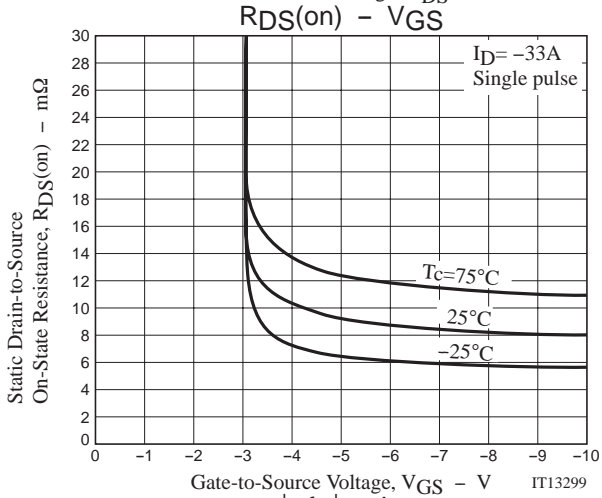
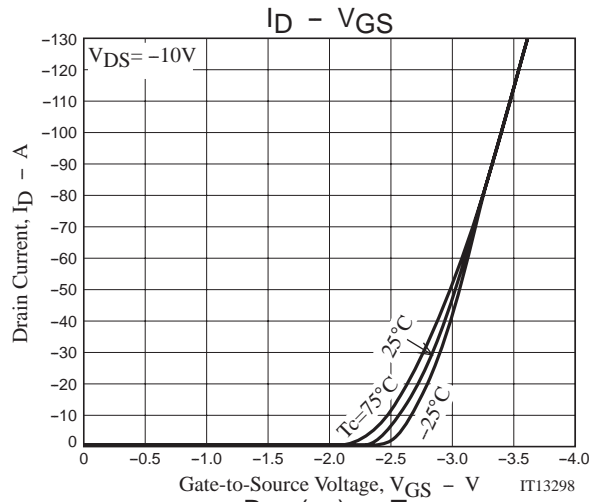
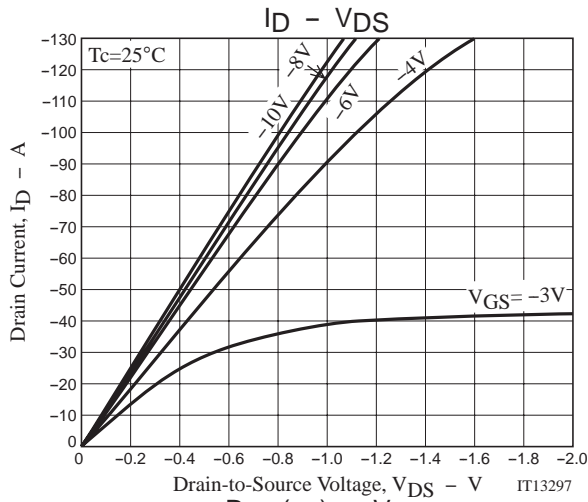


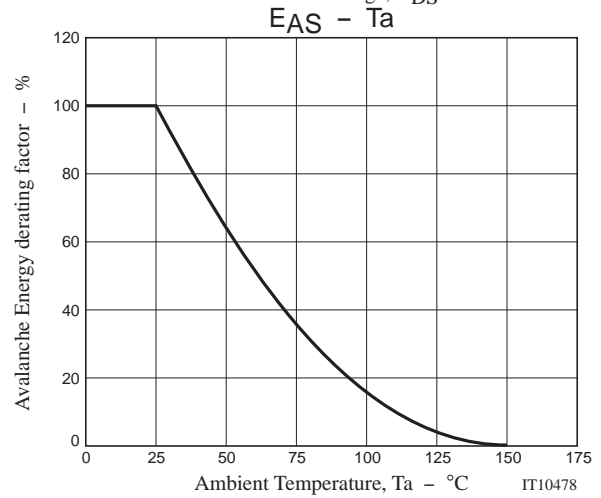
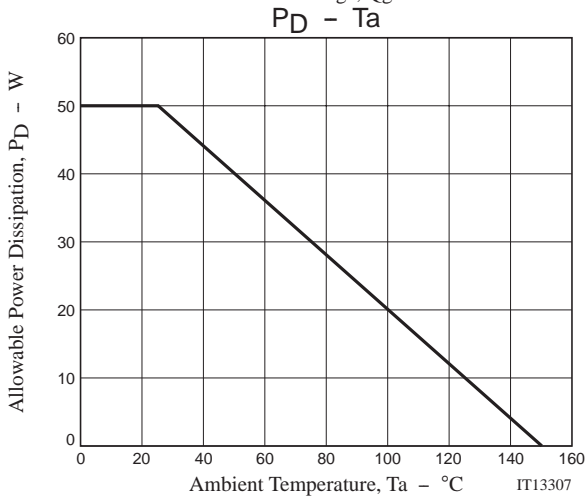
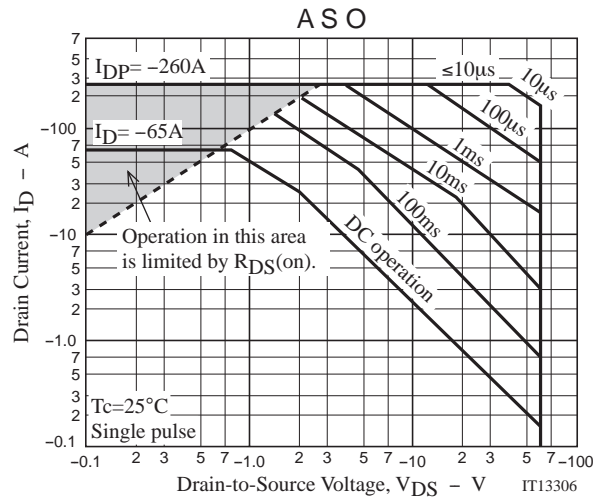
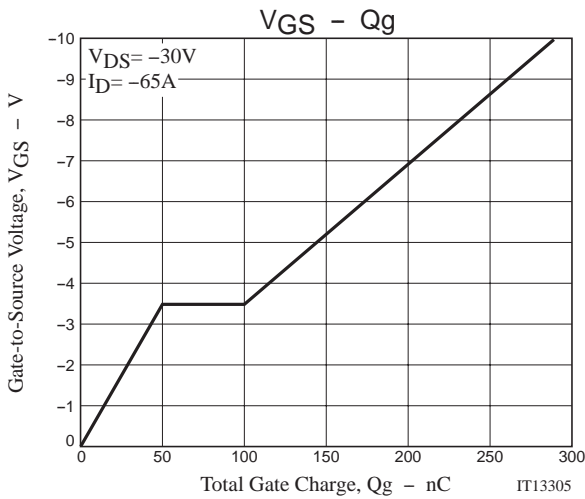
Switching Time Test Circuit



Avalanche Resistance Test Circuit







Note on usage : Since the 2SJ683 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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