Ordering number : ENA0360B

SANYO Semiconductors

DATA SHEET

2SK2618ALS — N-Channel Silicon MOSFET General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Low Qg.
- Ultrahigh-speed switching.
- Micaless package facilitating mounting.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		500	V
Gate-to-Source Voltage	V_{GSS}		±30	V
Drain Current (DC)	I_{Dc}*1	Limited only by maximum temperature	6.5	A
	I_{Dpack}*2	Tc=25°C (SANYO's ideal heat dissipation condition)*3	5.6	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	20	A
Allowable Power Dissipation	P_D		2.0	W
		Tc=25°C (SANYO's ideal heat dissipation condition)*3	30	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C
Avalanche Energy (Single Pulse) *4	E_{AS}		138	mJ
Avalanche Current *5	I_{AV}		5	A

*1 Shows chip capability

*2 Package limited

*3 SANYO's condition is radiation from backside.

The method is applying silicone grease to the backside of the device and attaching the device to water-cooled radiator made of aluminium.

*4 V_{DD}=50V, L=10mH, I_{AV}=5A

*5 L≤10mH, single pulse

Marking : K2618

SANYO Semiconductor Co., Ltd.

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

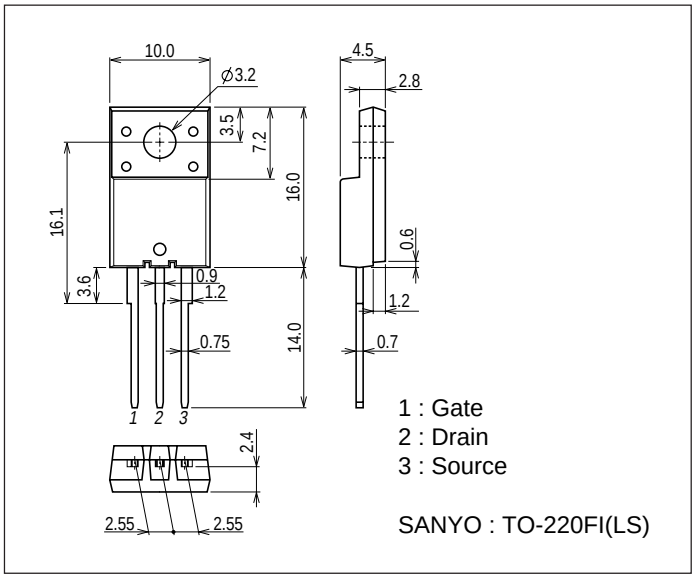
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0V	500			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=500V, V_{GS}=0V			1.0	mA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±30V, V_{DS}=0V			±100	nA
Cutoff Voltage	V_{GS}(off)	V_{DS}=10V, I_D=1mA	3.5		5.5	V
Forward Transfer Admittance	|yfs|	V_{DS}=10V, I_D=3A	1.5	3.0		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)	I_D=3A, V_{GS}=15V		0.95	1.25	Ω
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		700		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		250		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		120		pF
Total Gate Charge	Qg	V_{DS}=200V, V_{GS}=10V, I_D=5A		20		nC
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		20		ns
Rise Time	t_r	See specified Test Circuit.		20		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit.		50		ns
Fall Time	t_f	See specified Test Circuit.		25		ns
Diode Forward Voltage	V_{SD}	I_S=5A, V_{GS}=0V			1.2	V

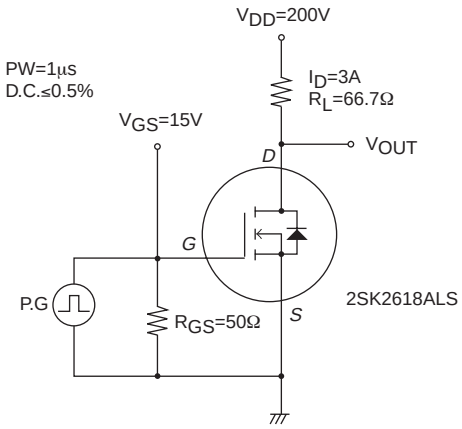
Package Dimensions

unit : mm (typ)

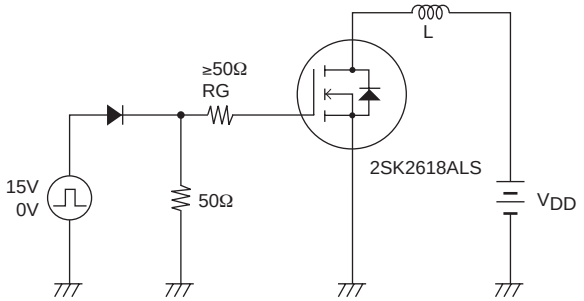
7509-002

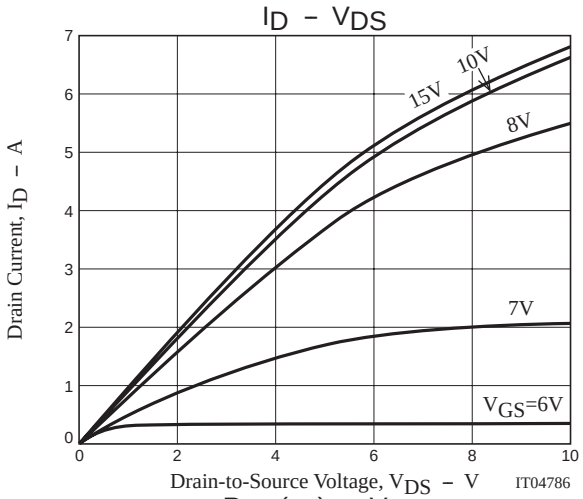


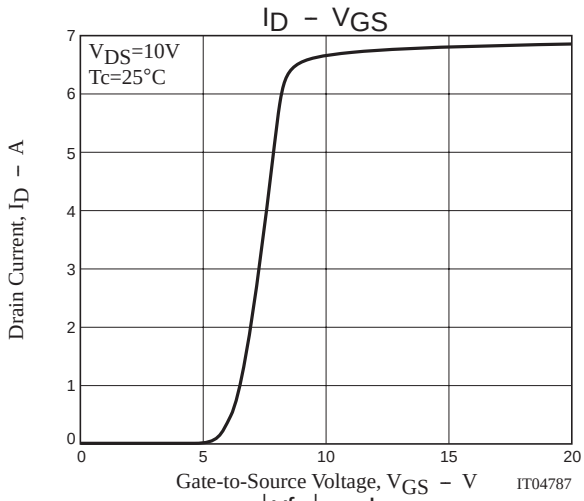
Switching Time Test Circuit

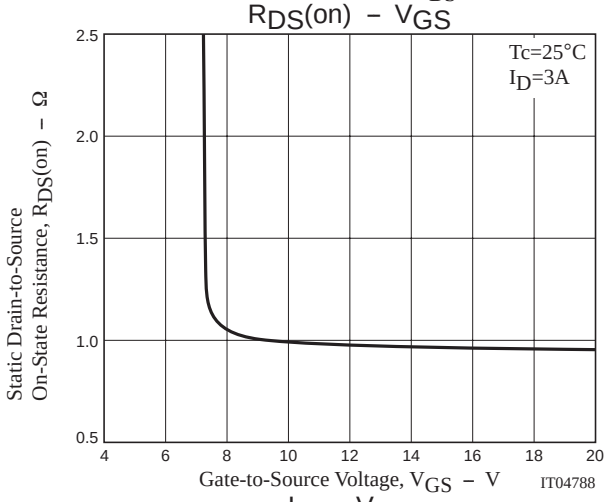


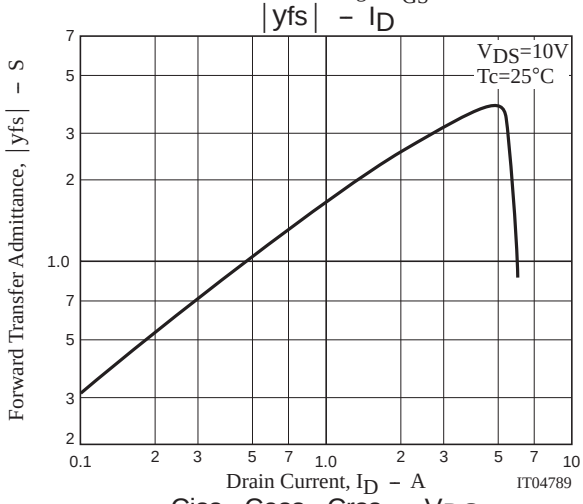
Avalanche Resistance Test Circuit

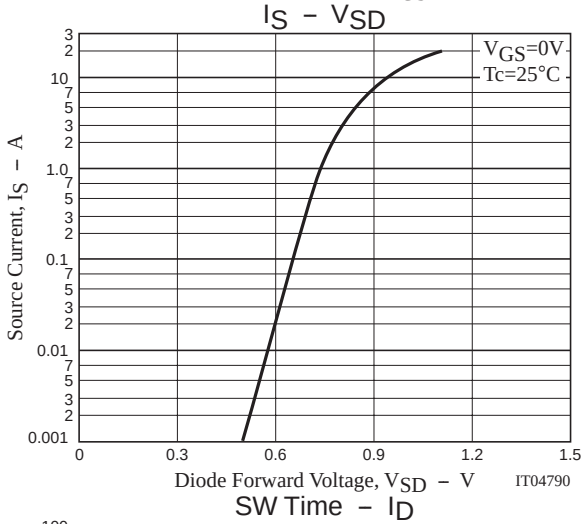


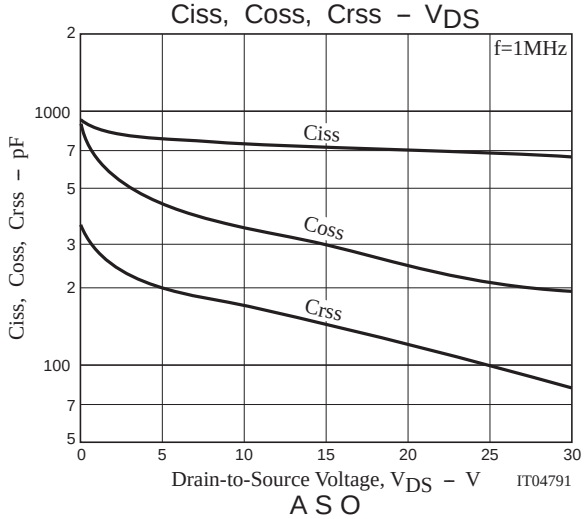

ID – VDS
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT04786
10V
15V
8V
7V
VGS=6V

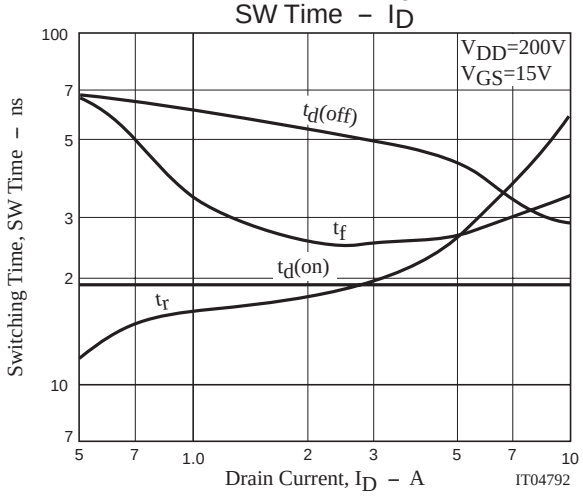

ID – VGS
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
IT04787
VDS=10V
Tc=25°C

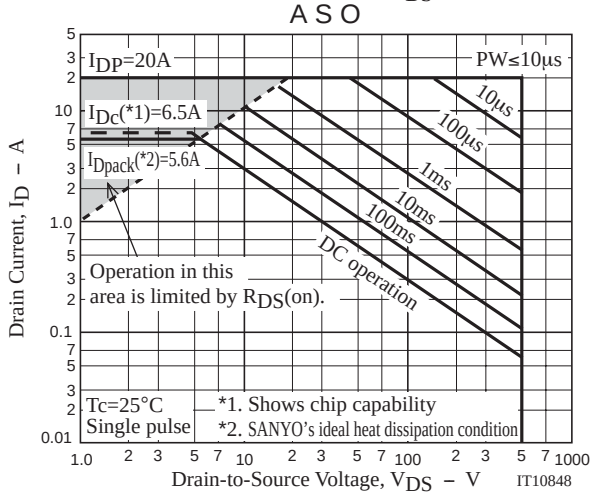

RDS(on) – VGS
Static Drain-to-Source
On-State Resistance, RDS(on) – Ω
Gate-to-Source Voltage, VGS – V
IT04788
Tc=25°C
ID=3A

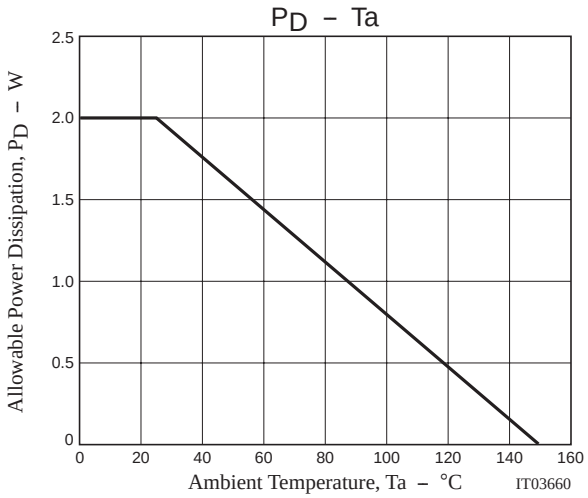

|yfs| – ID
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT04789
VDS=10V
Tc=25°C

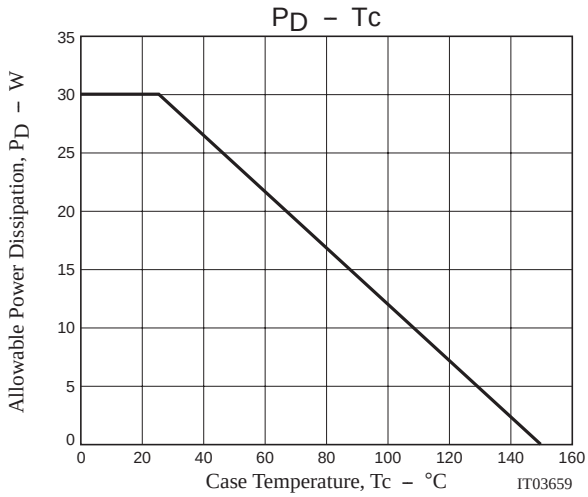

IS – VSD
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT04790
VGS=0V
Tc=25°C

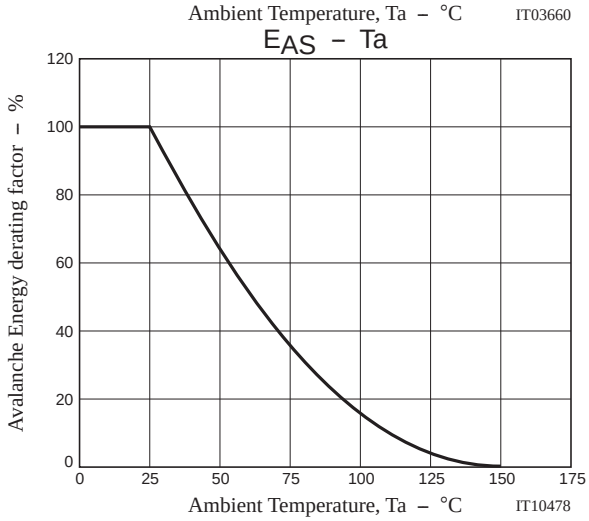

Ciss, Coss, Crss – VDS
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT04791
f=1MHz
Ciss
Coss
Crss


SW Time – ID
Switching Time, SW Time – ns
Drain Current, ID – A
IT04792
VDD=200V
VGS=15V
td(off)
tf
td(on)
tr


A S O
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT10848
IDP=20A
PW≤10μs
IDC(*1)=6.5A
IDpack(*2)=5.6A
10μs
100μs
1ms
10ms
100ms
DC operation
Operation in this
area is limited by RDS(on).
Tc=25°C
Single pulse
*1. Shows chip capability
*2. SANYO's ideal heat dissipation condition







Note on usage : Since the 2SK2618ALS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.