Ordering number : ENA0360A

SANYO Semiconductors
DATA SHEET

N-Channel Silicon MOSFET

2SK2618ALS — 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	SANYO's ideal heat dissipation condition	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)	30	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C
Avalanche Energy (Single Pulse) *3	E_{AS}		138	mJ
Avalanche Current *4	I_{AV}		5	A

*1 Shows chip capability

*2 Package limited

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

*4 L≤10mH, single pulse

Marking : K2618

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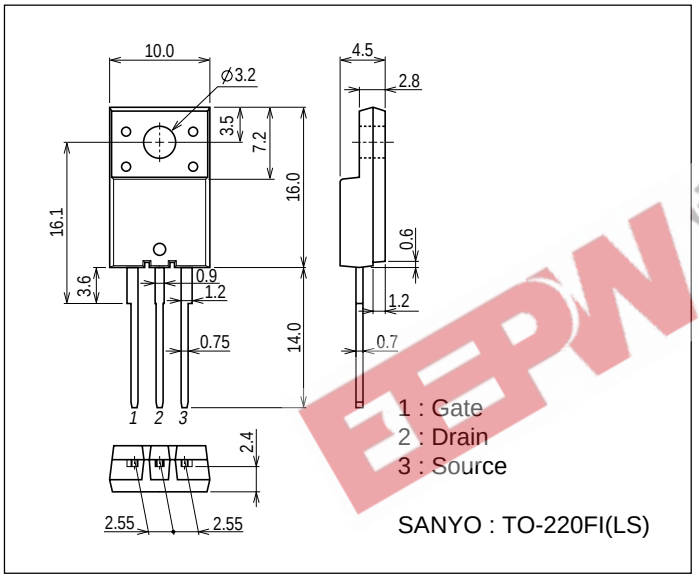
Electrical Characteristics at Ta=25°C

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

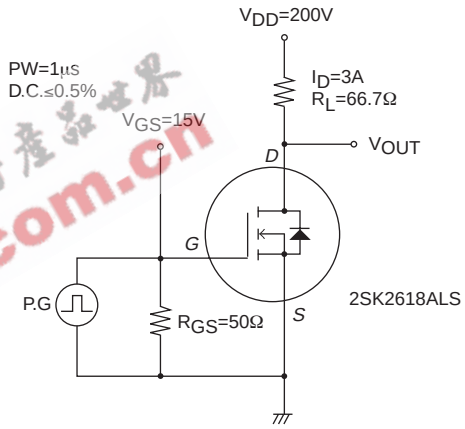
Package Dimensions

unit : mm (typ)

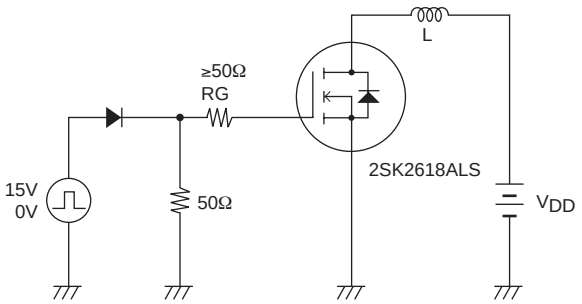
7509-002

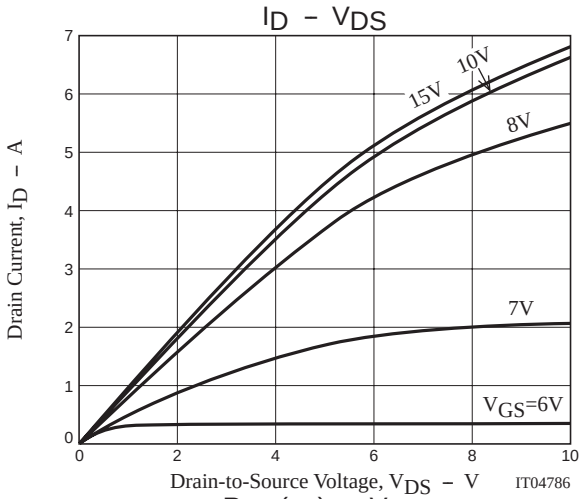


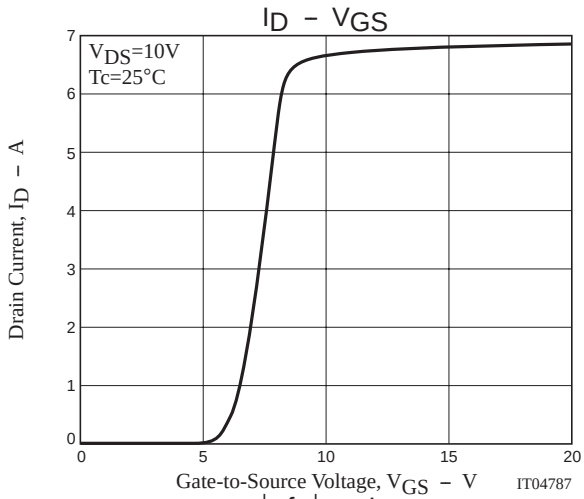
Switching Time Test Circuit

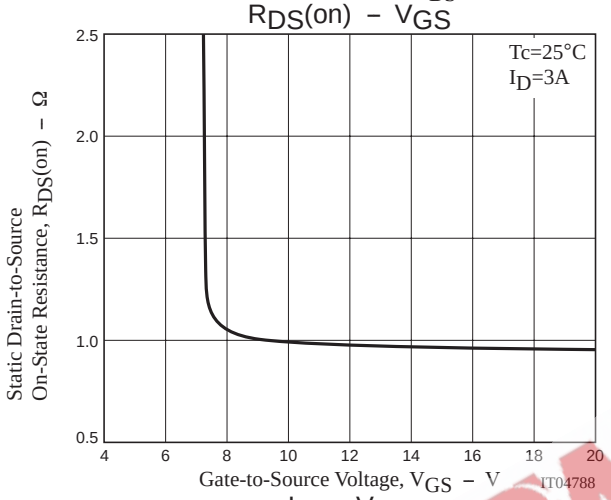


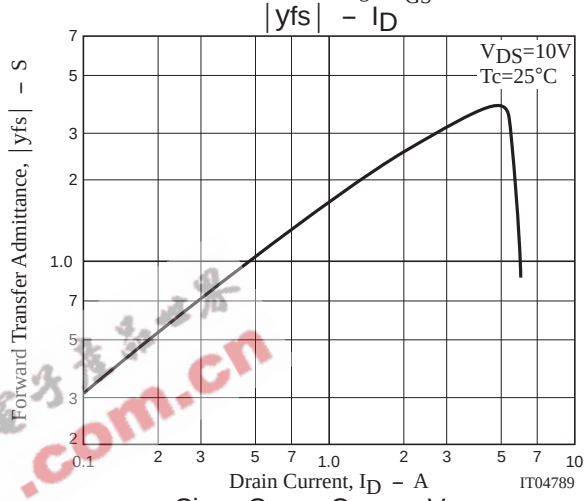
Avalanche Resistance Test Circuit

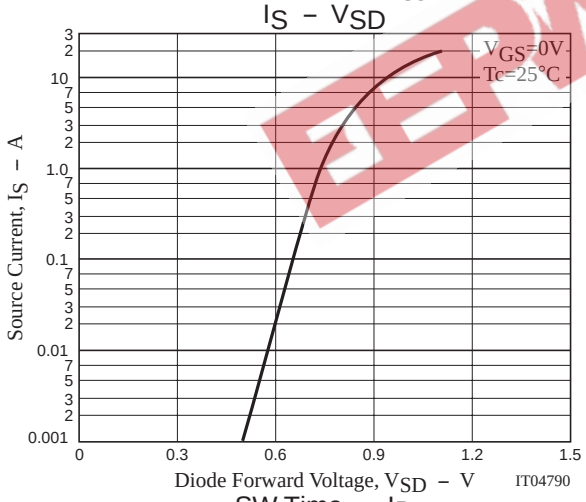


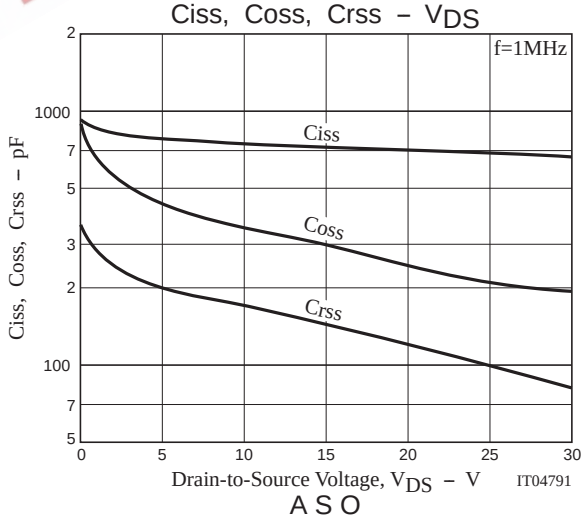

ID – VDS
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT04786
10V
15V
8V
7V
VGS=6V

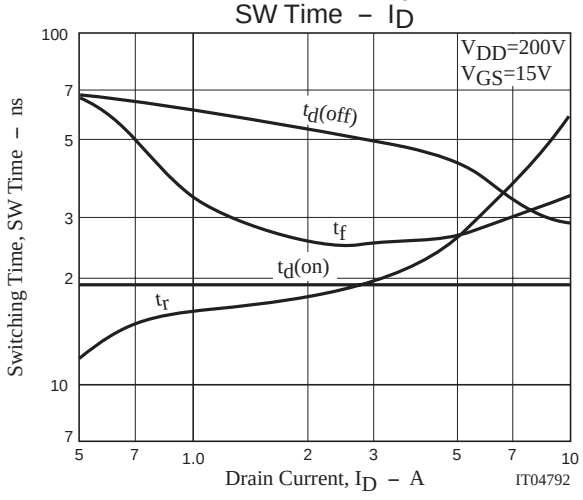

ID – VGS
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
IT04787
VDS=10V
Tc=25°C

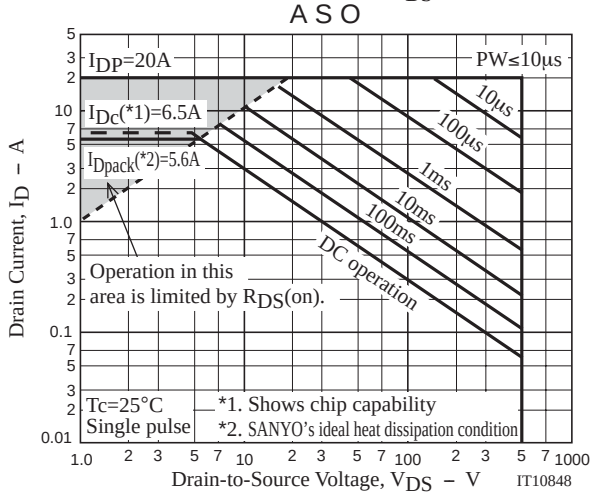

RDS(on) – VGS
Static Drain-to-Source
On-State Resistance, RDS(on) – Ω
Gate-to-Source Voltage, VGS – V
IT04788
Tc=25°C
ID=3A

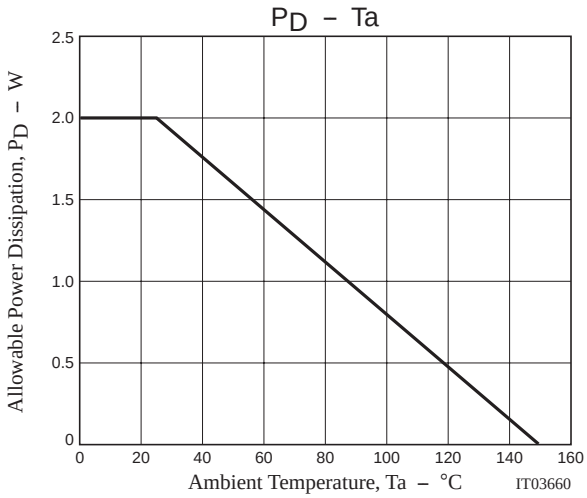

|yfs| – ID
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT04789
VDS=10V
Tc=25°C

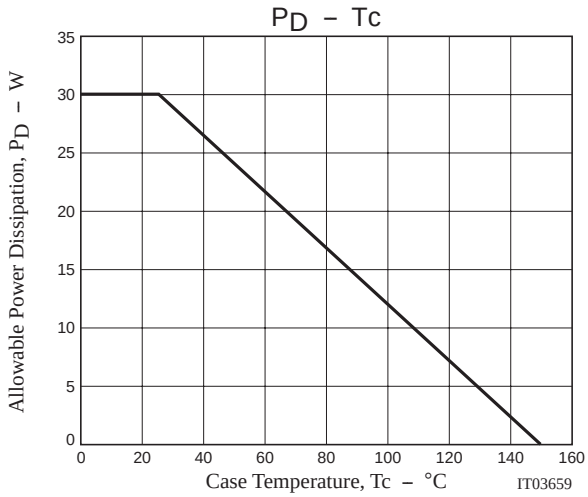

IS – VSD
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT04790
VGS=0V
Tc=25°C

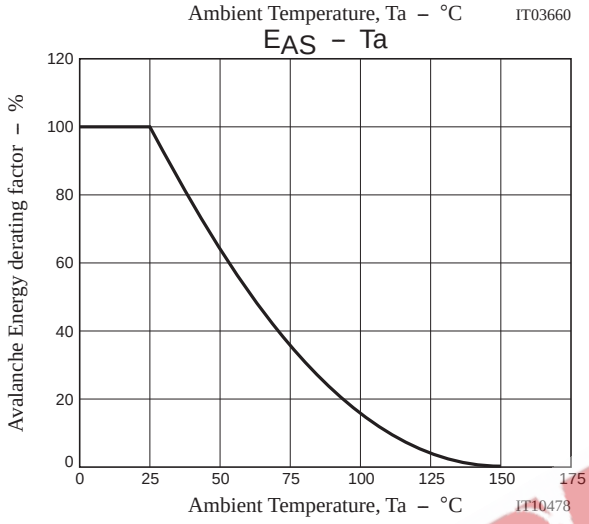

Ciss, Coss, Crss – VDS
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT04791
f=1MHz
Ciss
Coss
Crss


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.

This catalog provides information as of February, 2007. Specifications and information herein are subject to change without notice.