Ordering number : ENA0363B

SANYO Semiconductors
DATA SHEET

N-Channel Silicon MOSFET

2SK2628ALS — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Low Qg.
- Ultrahigh-speed switching.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		600	V
Gate-to-Source Voltage	V_{GSS}		±30	V
Drain Current (DC)	I_{Dc}*1	Limited only by maximum temperature	7	A
	I_{Dpack}*2	Tc=25°C (SANYO's ideal heat dissipation condition)*3	6.2	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	24	A
Allowable Power Dissipation	P_D		2.0	W
		Tc=25°C (SANYO's ideal heat dissipation condition)*3	35	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C
Avalanche Energy (Single Pulse) *4	E_{AS}		98	mJ
Avalanche Current *5	I_{AV}		6	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=5mH, I_{AV}=6A

*5 L≤5mH, single pulse

Marking : K2628

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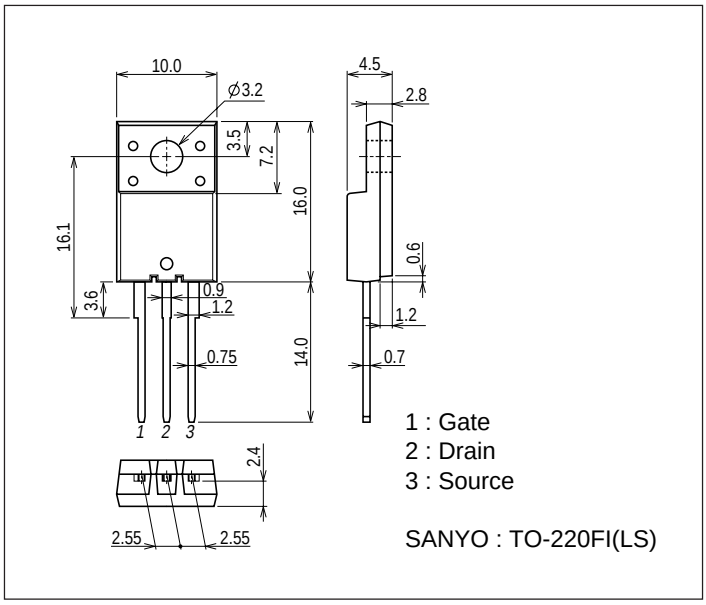
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0V	600			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=600V, 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=4A	2.0	4.0		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)	I_D=2A, V_{GS}=15V		0.9	1.1	Ω
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		1050		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		320		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		180		pF
Total Gate Charge	Qg	V_{DS}=200V, V_{GS}=10V, I_D=6A		30		nC
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		23		ns
Rise Time	t_r	See specified Test Circuit.		35		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit.		90		ns
Fall Time	t_f	See specified Test Circuit.		35		ns
Diode Forward Voltage	V_{SD}	I_S=6A, V_{GS}=0V		0.85	1.2	V

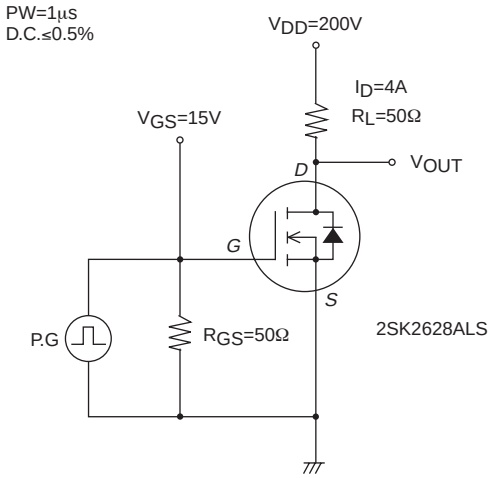
Package Dimensions

unit : mm (typ)

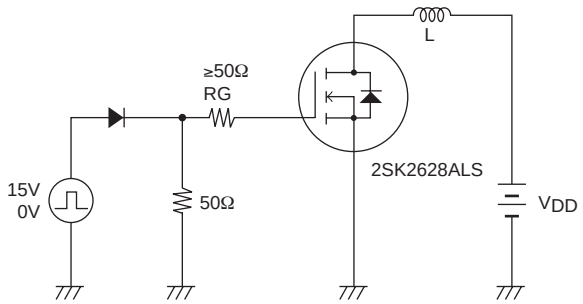
7509-002

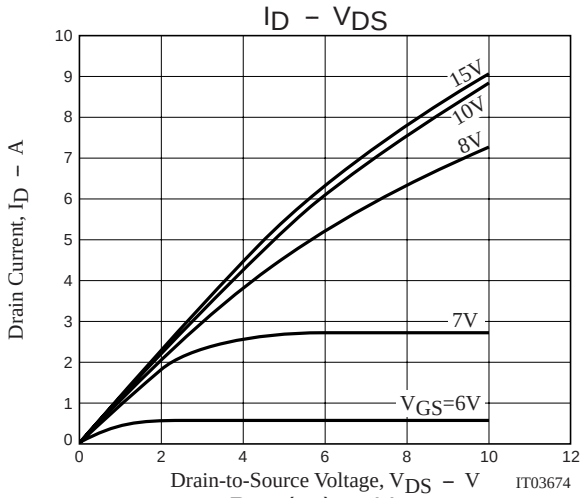


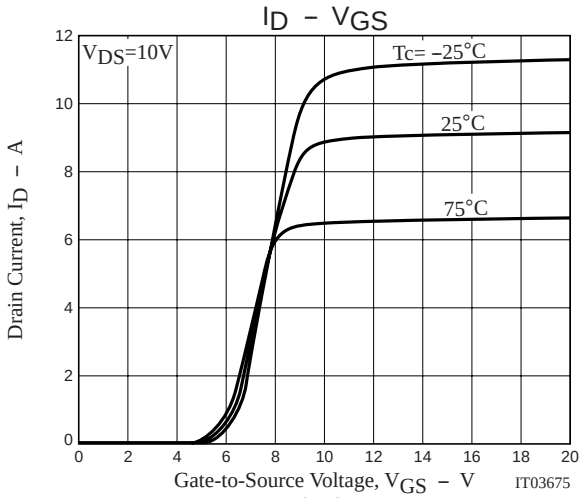
Switching Time Test Circuit

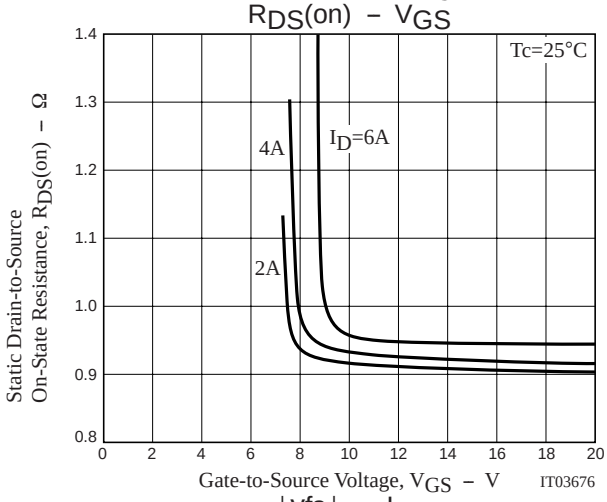


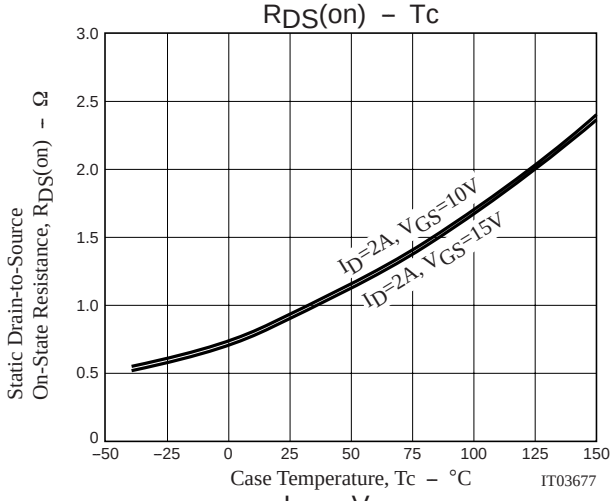
Avalanche Resistance Test Circuit

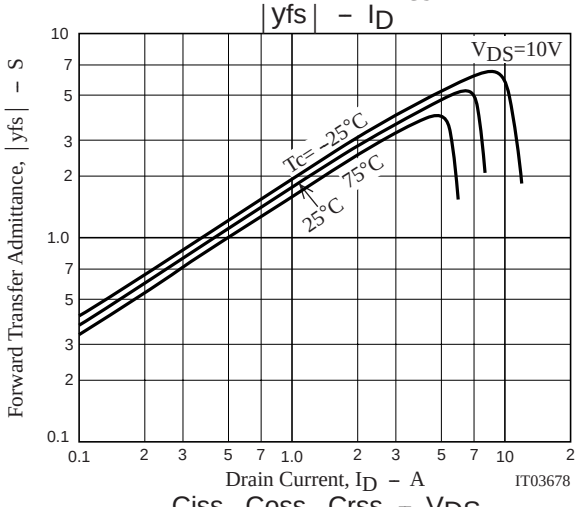


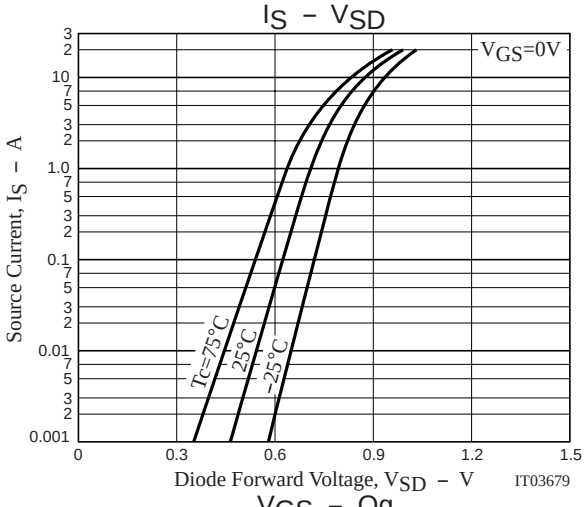

ID – VDS
Drain Current, ID – A
15V
10V
8V
7V
VGS=6V
Drain-to-Source Voltage, VDS – V
IT03674

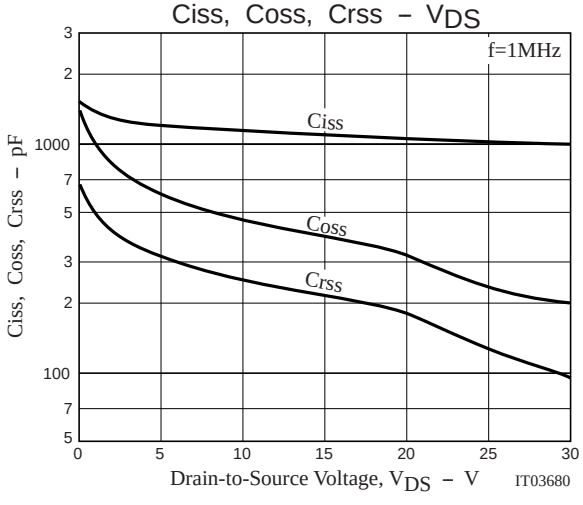

ID – VGS
VDS=10V
Tc= –25°C
25°C
75°C
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
IT03675

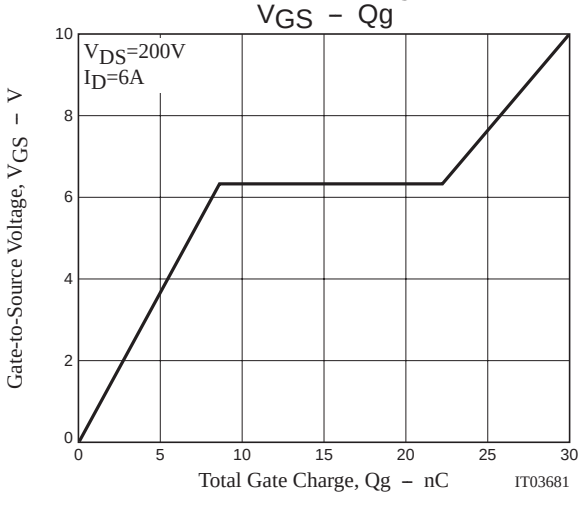

RDS(on) – VGS
Tc=25°C
4A
ID=6A
2A
Static Drain-to-Source On-State Resistance, RDS(on) – Ω
Gate-to-Source Voltage, VGS – V
IT03676


RDS(on) – Tc
ID=2A, VGS=10V
ID=2A, VGS=15V
Static Drain-to-Source On-State Resistance, RDS(on) – Ω
Case Temperature, Tc – °C
IT03677

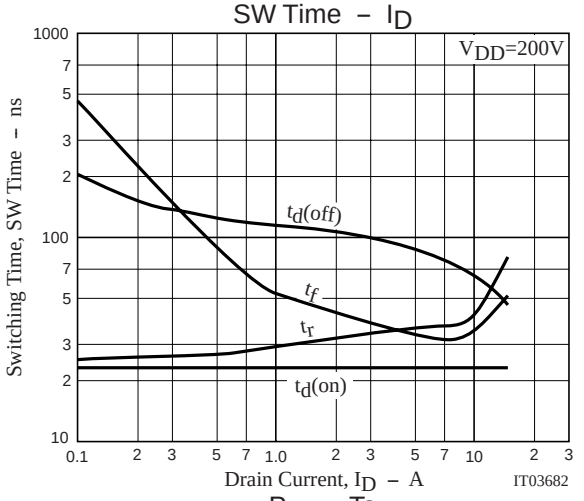

|yfs| – ID
VDS=10V
Tc= –25°C
75°C
25°C
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT03678


IS – VSD
VGS=0V
Tc=75°C
25°C
–25°C
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT03679

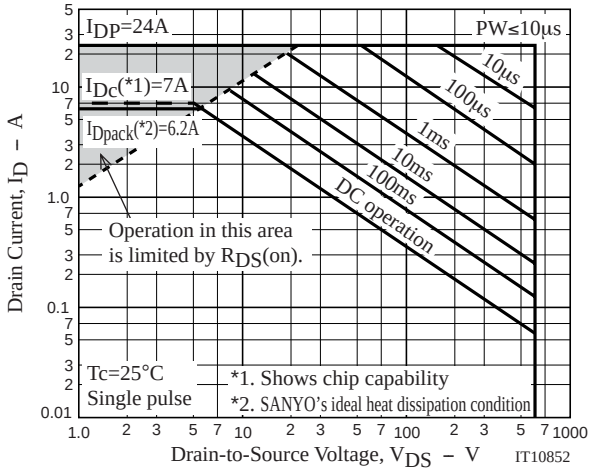

Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT03680


VGS – Qg
VDS=200V
ID=6A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT03681

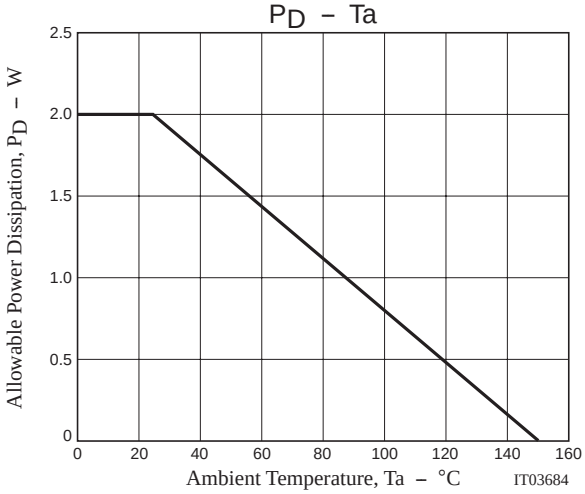
SW Time – I_D



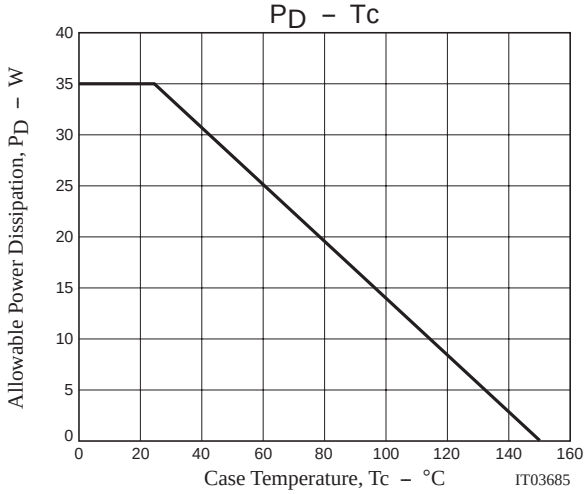
A S O



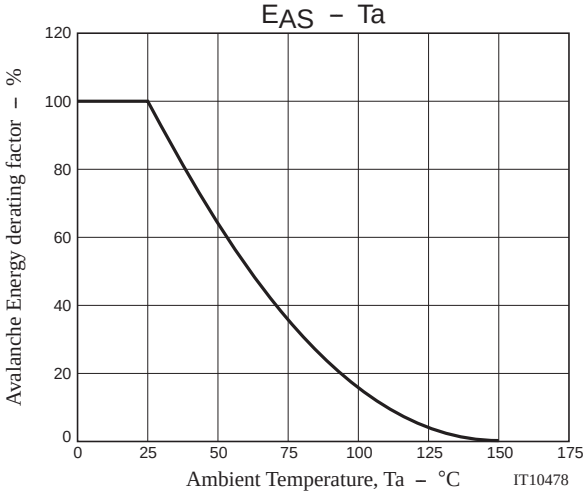
P_D – Ta



P_D – Tc



E_{AS} – Ta



Note on usage : Since the 2SK2628ALS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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