Ordering number : ENA0362B

SANYO Semiconductors
DATA SHEET

N-Channel Silicon MOSFET

2SK2624ALS — 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_D		3.5	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	12	A
Allowable Power Dissipation	P_D		2.0	W
		Tc=25°C (SANYO's ideal heat dissipation condition)*1	25	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C
Avalanche Energy (Single Pulse) *2	E_{AS}		49	mJ
Avalanche Current *3	I_{AV}		3	A

*1 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.

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

*3 L≤10mH, single pulse

Marking : K2624

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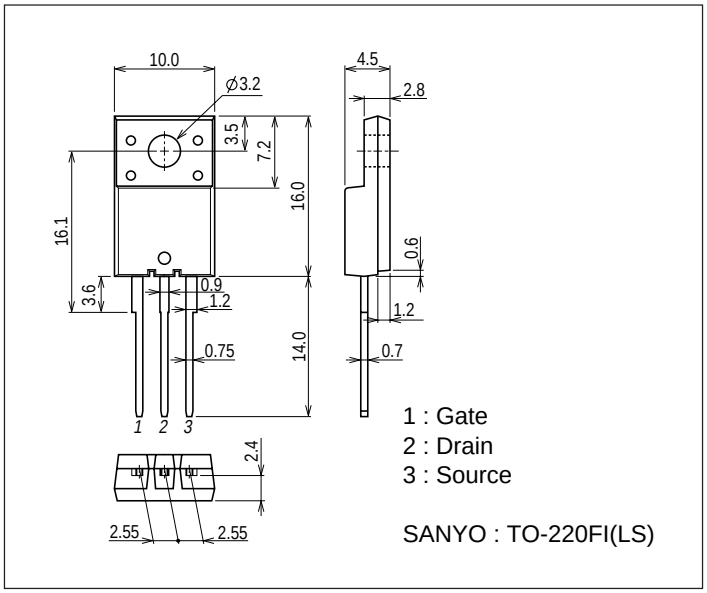
Electrical Characteristics at Ta=25°C

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=1.8A	1.0	2.0		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)	I_D=1.8A, V_{GS}=15V		2.0	2.6	Ω
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		550		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		165		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		85		pF
Total Gate Charge	Qg	V_{DS}=200V, I_D=3A, V_{GS}=10V		15		nC
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		17		ns
Rise Time	t_r	See specified Test Circuit.		17		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit.		40		ns
Fall Time	t_f	See specified Test Circuit.		22		ns
Diode Forward Voltage	V_{SD}	I_S=3A, V_{GS}=0V		0.98	1.2	V

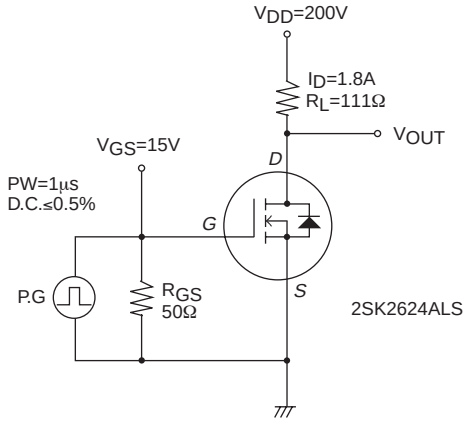
Package Dimensions

unit : mm (typ)

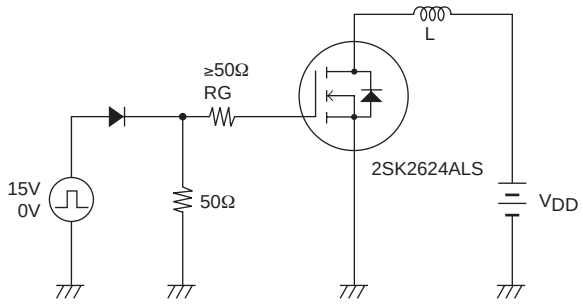
7509-002

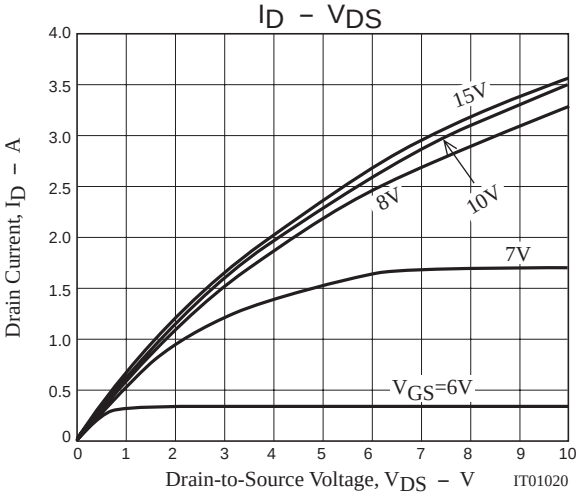


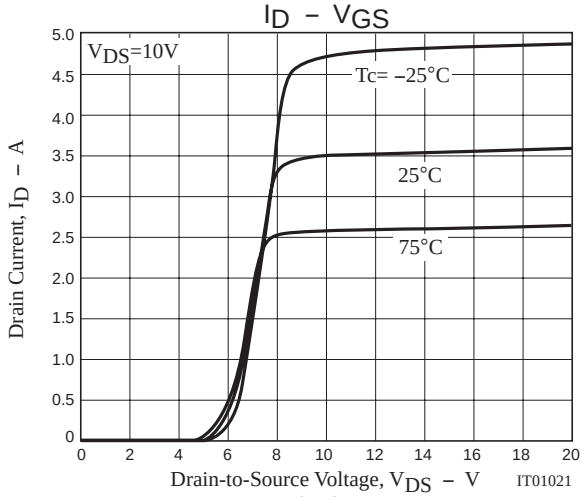
Switching Time Test Circuit

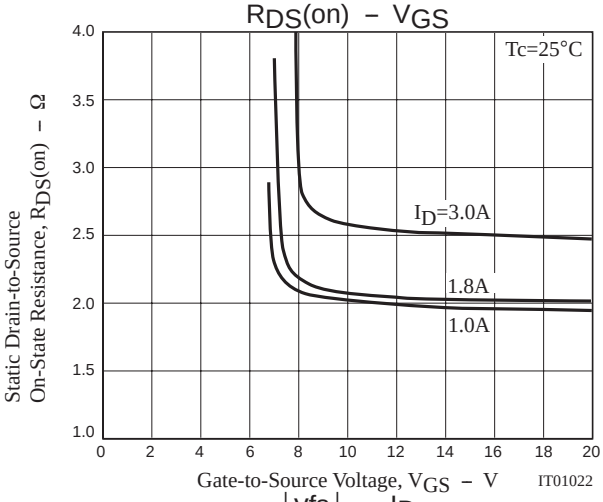


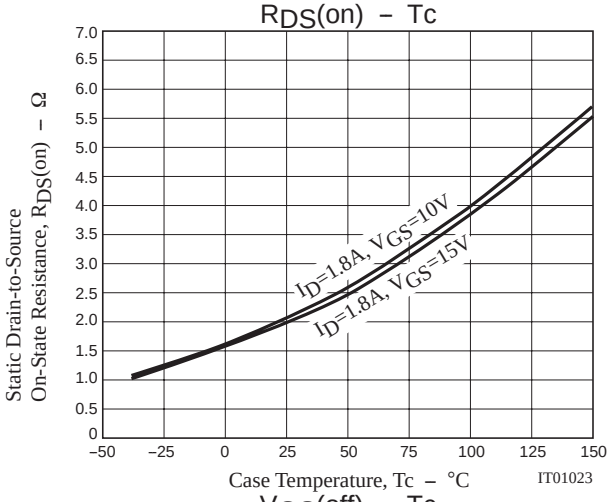
Avalanche Resistance Test Circuit

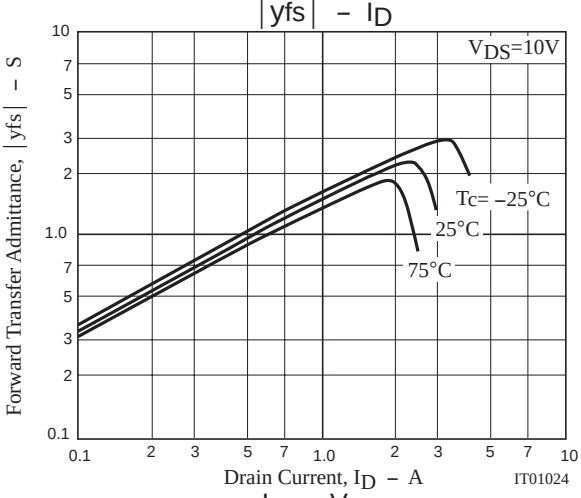


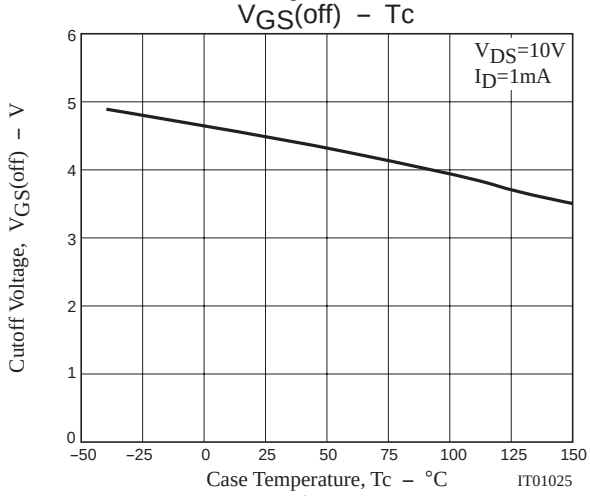

ID – VDS
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT01020
15V
10V
8V
7V
VGS=6V

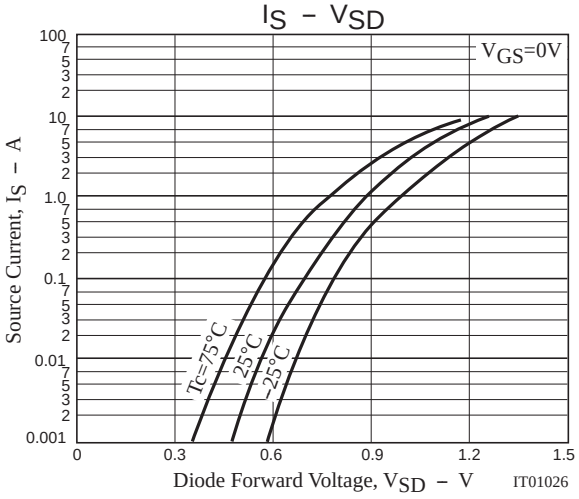

ID – VGS
VDS=10V
Tc= –25°C
25°C
75°C
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT01021

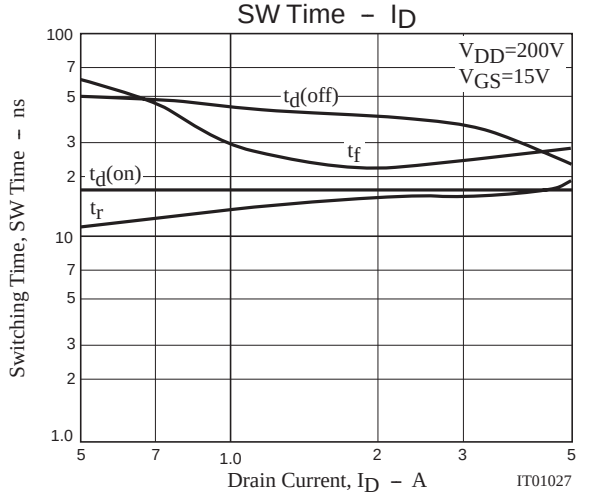

RDS(on) – VGS
Tc=25°C
ID=3.0A
1.8A
1.0A
Static Drain-to-Source On-State Resistance, RDS(on) – Ω
Gate-to-Source Voltage, VGS – V
IT01022

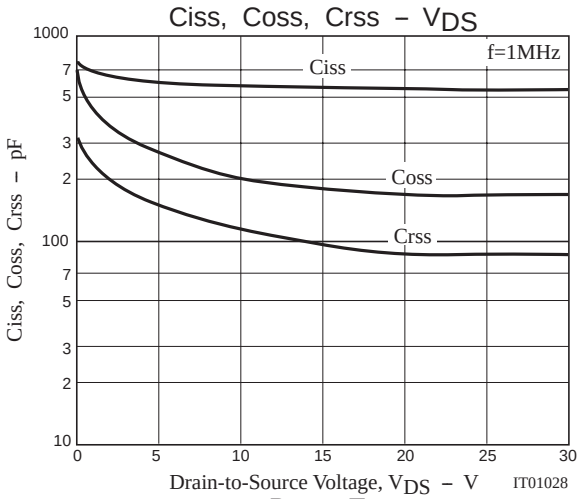

RDS(on) – Tc
ID=1.8A, VGS=10V
ID=1.8A, VGS=15V
Static Drain-to-Source On-State Resistance, RDS(on) – Ω
Case Temperature, Tc – °C
IT01023

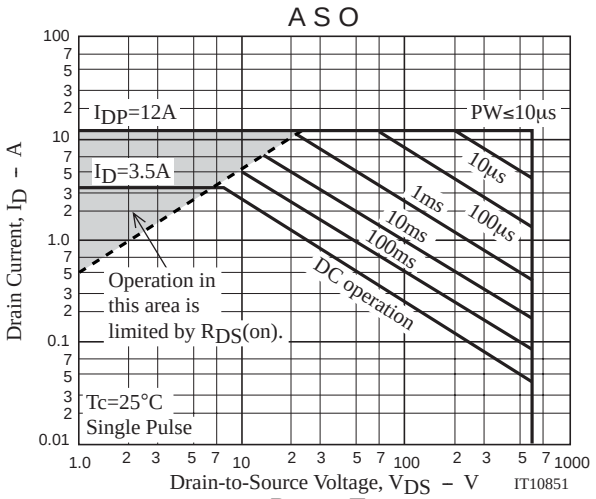

|yfs| – ID
VDS=10V
Tc= –25°C
25°C
75°C
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT01024

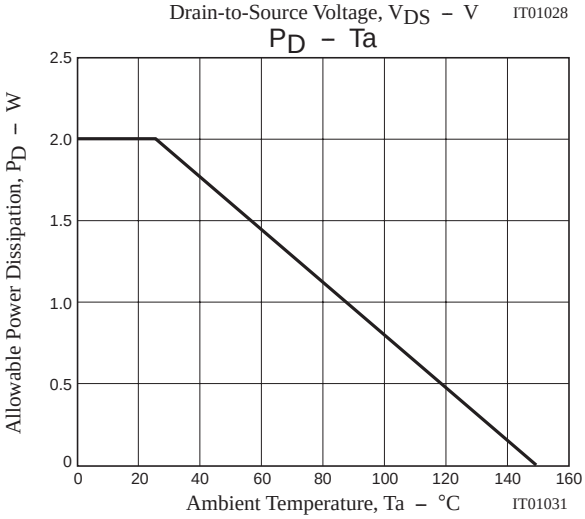

VGS(off) – Tc
VDS=10V
ID=1mA
Cutoff Voltage, VGS(off) – V
Case Temperature, Tc – °C
IT01025

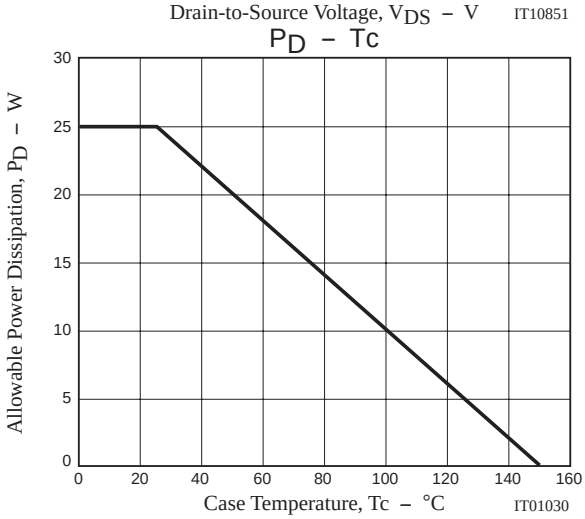

IS – VSD
VGS=0V
Tc=75°C
25°C
–25°C
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT01026

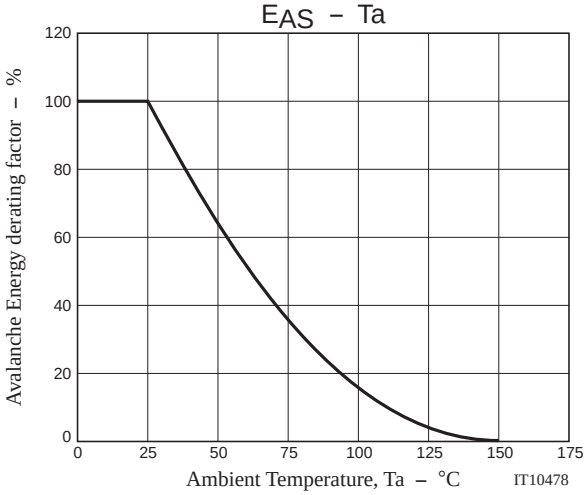

SW Time – ID
VDD=200V
VGS=15V
td(off)
tf
td(on)
tr
Switching Time, SW Time – ns
Drain Current, ID – A
IT01027


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT01028


A S O
IDP=12A
PW≤10μs
ID=3.5A
10μs
1ms
100μs
10ms
100ms
DC operation
Operation in this area is limited by RDS(on).
Tc=25°C
Single Pulse
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT10851


PD – Ta
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT01031


PD – Tc
Allowable Power Dissipation, PD – W
Case Temperature, Tc – °C
IT01030


EAS – Ta
Avalanche Energy derating factor – %
Ambient Temperature, Ta – °C
IT10478

Note on usage : Since the 2SK2624ALS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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