Ordering number : EN5424A

N-Channel Silicon MOSFET

2SK2347

High-Voltage, High-Speed Switching Applications

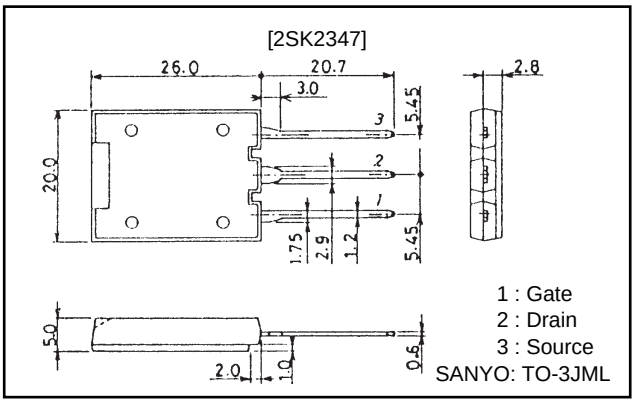
Features

- Low ON resistance, ultrahigh-speed switching.
- High reliability (Adoption of HVP process).

Package Dimensions

unit: mm

2131-TO-3JML



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		1000	V
Gate-to-Source Voltage	V_{GSS}		±30	V
Drain Current (DC)	I_D		20	A
Drain Current (pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	40	A
Allowable Power Dissipation	P_D		4.6	W
		Tc=25°C	160	W
Channel Temperature	Tch		150	°C
Storage temperature	Tstg		–55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
D-S Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0	1000			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=1000V, V_{GS}=0			1.0	mA
Gate-to Source Leak Current	I_{GSS}	V_{GS}=±30V, V_{DS}=0			±100	nA
Cutoff Voltage	$V_{GS(off)}$	V_{DS}=10V, I_D=1mA	1.5		3.5	V
Forward Transfer Admittance	$\|y_{fs}\|$	V_{DS}=20V, I_D=10A	5.0	10		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	I_D=10A, V_{GS}=10V		0.6	0.8	Ω
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		3300		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		750		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		500		pF

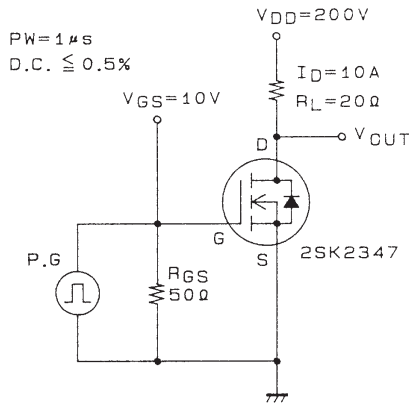
Continued on next page.

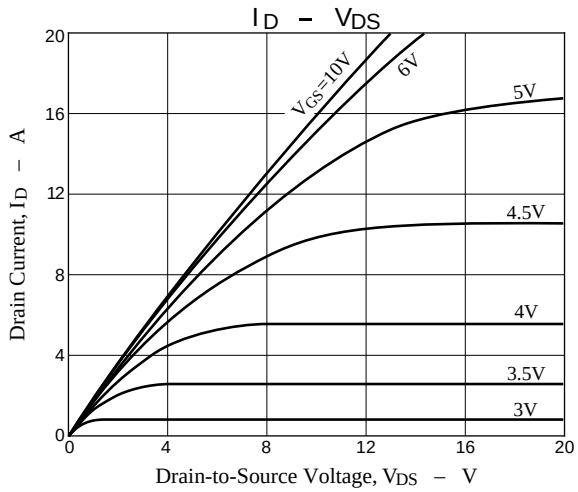
SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

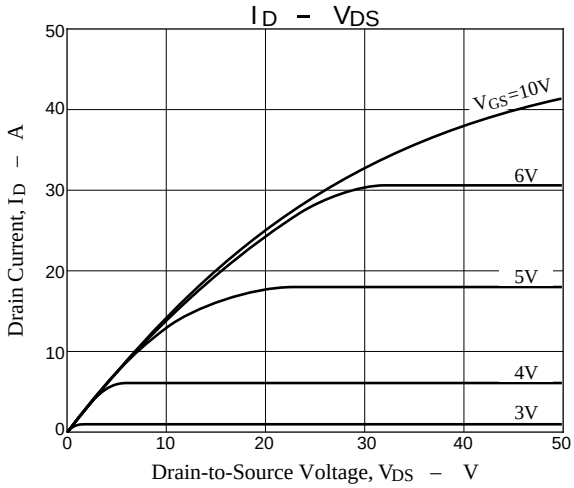
Continued from preceding page.

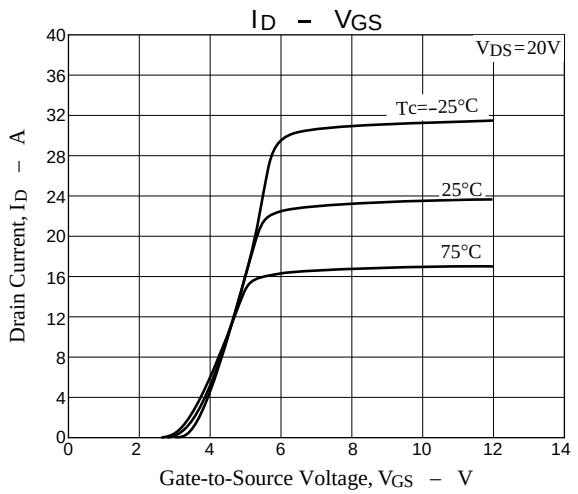
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	I_D=10A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50Ω		45		ns
Rise Time	t_r			200		ns
Turn-OFF Delay Time	$t_{d(off)}$			900		ns
Fall Time	t_f			250		ns
Diode Forward Voltage	V_{SD}	I_S=20A, V_{GS}=0			1.5	V
Reverse Recovery Time	t_{rr}	I_S=20A, di/dt=100A/μs		0.5	1.0	μs

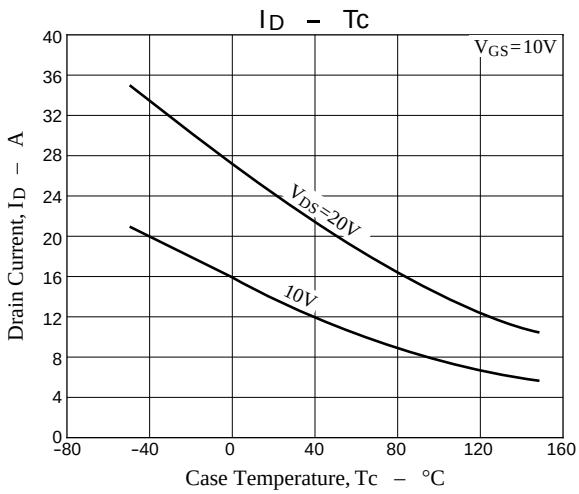
Switching Time Test Circuit

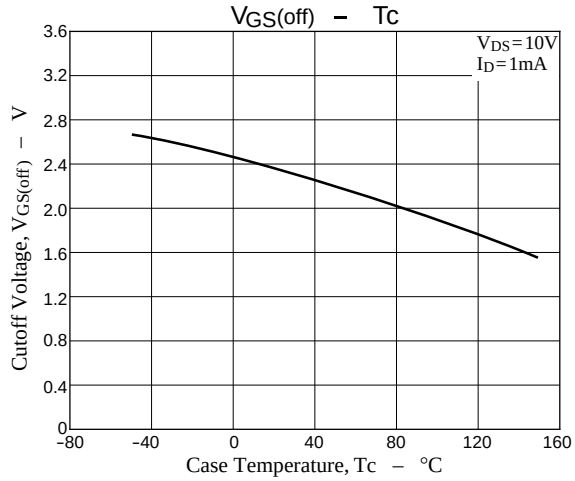


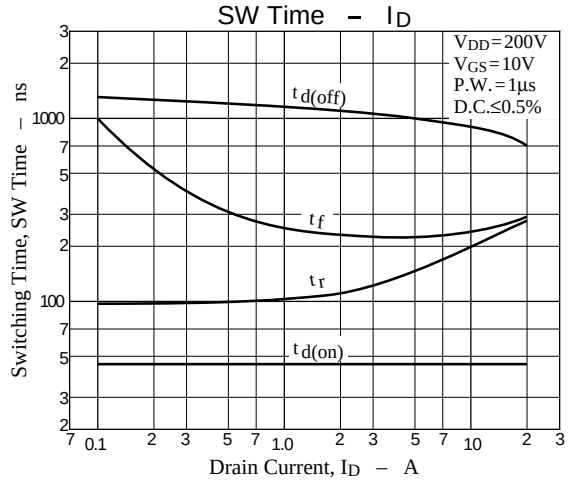


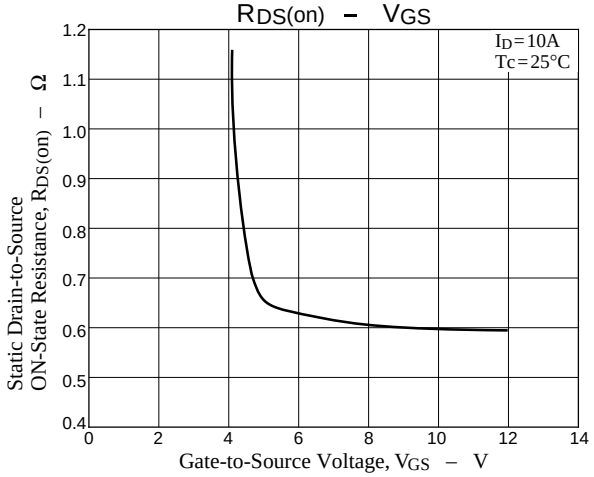


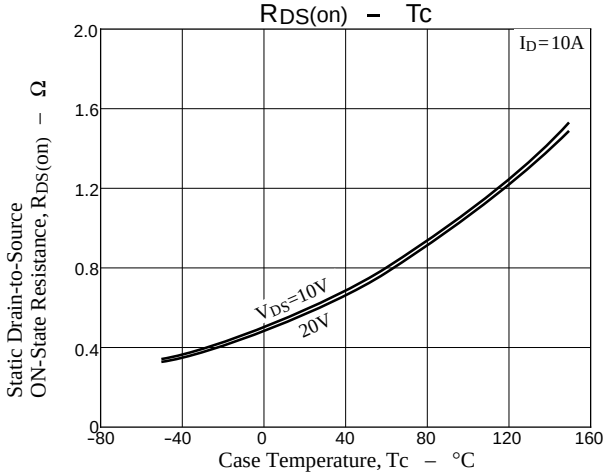


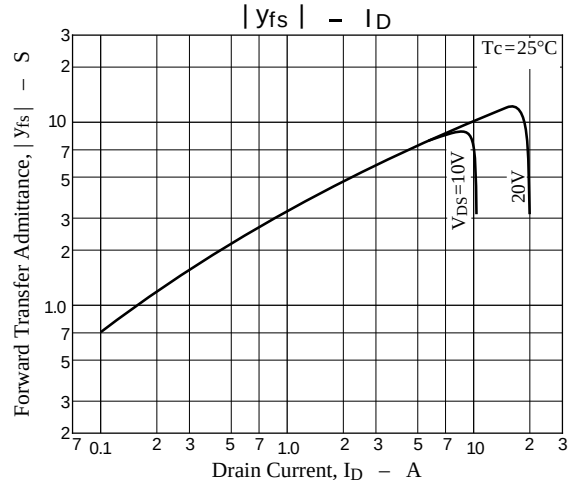


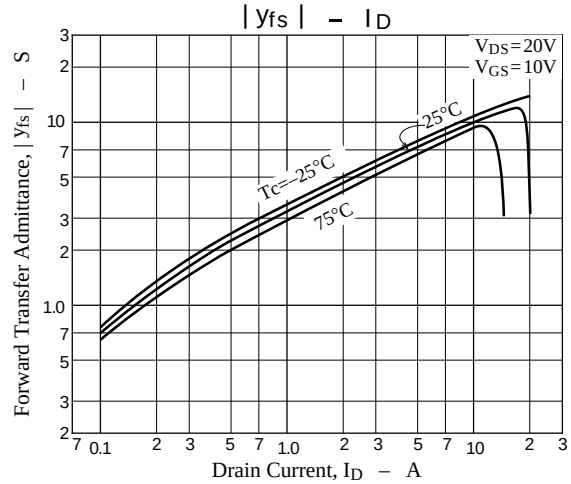

VGS(off) – Tc
VDS=10V
ID=1mA
Cutoff Voltage, VGS(off) – V
Case Temperature, Tc – °C

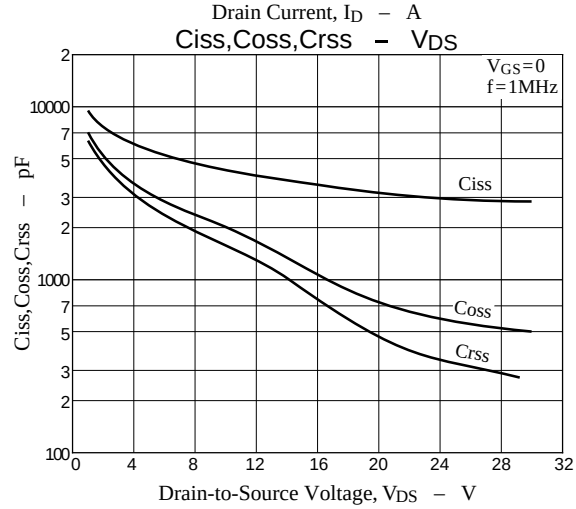

SW Time – ID
VDD=200V
VGS=10V
P.W.=1µs
D.C.≤0.5%
td(off)
tf
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A

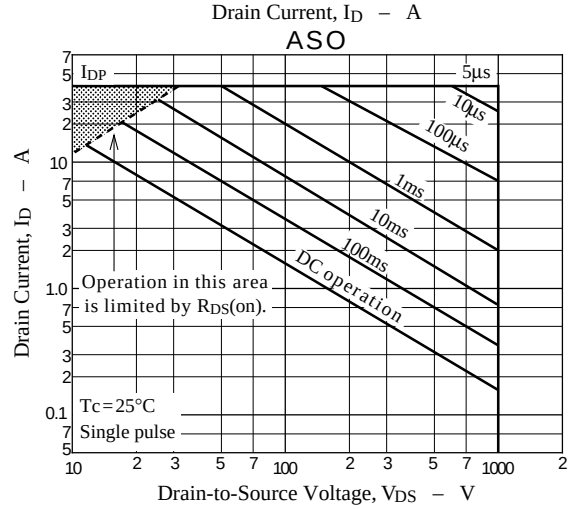

RDS(on) – VGS
ID=10A
Tc=25°C
Static Drain-to-Source ON-State Resistance, RDS(on) – Ω
Gate-to-Source Voltage, VGS – V


RDS(on) – Tc
ID=10A
VDS=10V
20V
Static Drain-to-Source ON-State Resistance, RDS(on) – Ω
Case Temperature, Tc – °C


| yfs | – ID
Tc=25°C
VDS=10V
20V
Forward Transfer Admittance, | yfs | – S
Drain Current, ID – A


| yfs | – ID
VDS=20V
VGS=10V
25°C
Tc=–25°C
75°C
Forward Transfer Admittance, | yfs | – S
Drain Current, ID – A


Ciss,Coss,Crss – VDS
VGS=0
f=1MHz
Ciss
Coss
Crss
Ciss,Coss,Crss – pF
Drain-to-Source Voltage, VDS – V


ASO
IDP
5µs
10µs
100µs
1ms
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