Ordering number: EN3459

SANYO

No.3459

2SK1456

N-Channel MOS Silicon FET

Very High-Speed Switching Applications

Features

- Low ON-state resistance.
- Very high-speed switching.
- Converters.

Absolute Maximum Ratings at Ta = 25°C

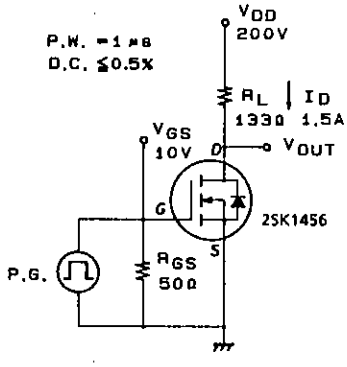
				unit
Drain to Source Voltage	V_{DSS}		900	V
Gate to Source Voltage	V_{GSS}		±30	V
Drain Current(DC)	I_D		3	A
Drain Current(Pulse)	I_{DP}	PW≦10μs, duty cycle≦1%	6	A
Allowable Power Dissipation	P_D	Tc = 25°C	60	W
			1.75	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Electrical Characteristics at Ta = 25°C

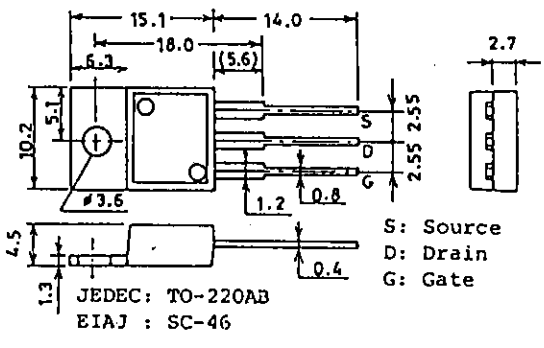
			min	typ	max	unit
D-S Breakdown Voltage	$V_{(BR)DSS}$	I_D = 1mA, V_{GS} = 0	900			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 900V, V_{GS} = 0			1.0	mA
Gate to Source Leakage Current	I_{GSS}	V_{GS} = ±30V, V_{DS} = 0			±100	nA
Cutoff Voltage	$V_{GS(off)}$	V_{DS} = 10V, I_D = 1mA	2.0		3.0	V
Forward Transfer Admittance	$\|Y_{fs}\|$	V_{DS} = 20V, I_D = 1.5A	0.8	1.5		S
Static Drain to Source on State Resistance	$R_{DS(on)}$	I_D = 1.5A, V_{GS} = 10V		4.7	6.0	Ω
Input Capacitance	Ciss	V_{DS} = 20V, f = 1MHz		350		pF
Output Capacitance	Coss	V_{DS} = 20V, f = 1MHz		150		pF
Reverse Transfer Capacitance	Crss	V_{DS} = 20V, f = 1MHz		100		pF
Turn-ON Delay Time	$t_{d(on)}$	I_D = 1.5A, V_{GS} = 10V V_{DD} = 200V, R_{GS} = 50Ω		15		ns
Rise Time	t_r			25		ns
Turn-OFF Delay Time	$t_{d(off)}$			120		ns
Fall Time	t_f			40		ns
Diode Forward Voltage	V_{SD}	I_S = 3A, V_{GS} = 0			1.8	V

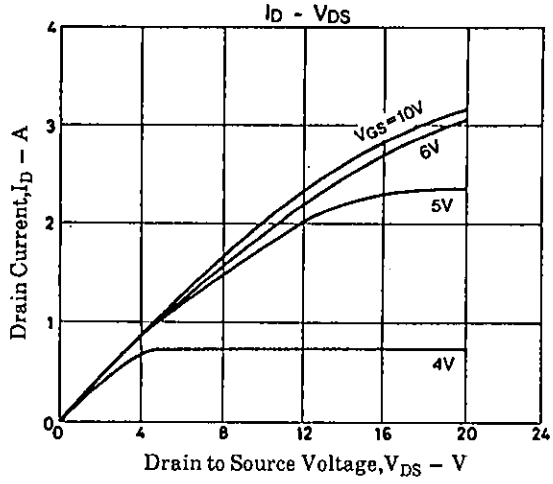
(Note) Be careful in handling the 2SK1456 because it has no protection diode between gate and source.

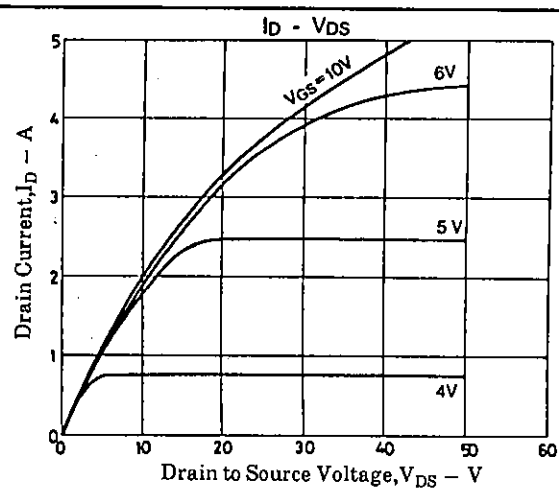
Switching Time Test Circuit

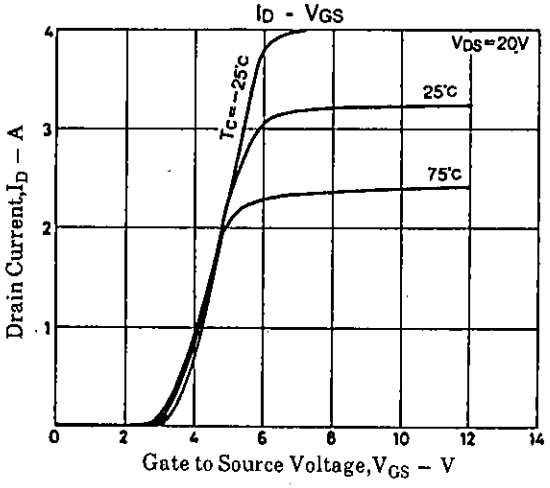


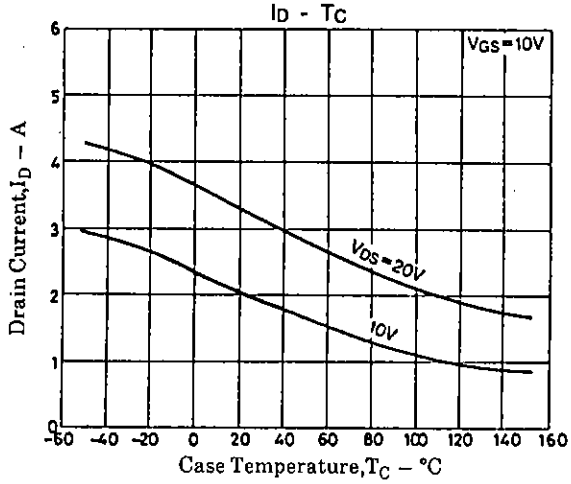
Package Dimensions 2052B
(unit : mm)

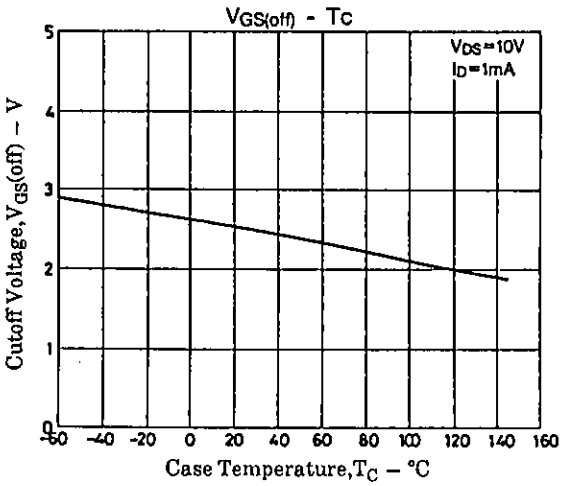


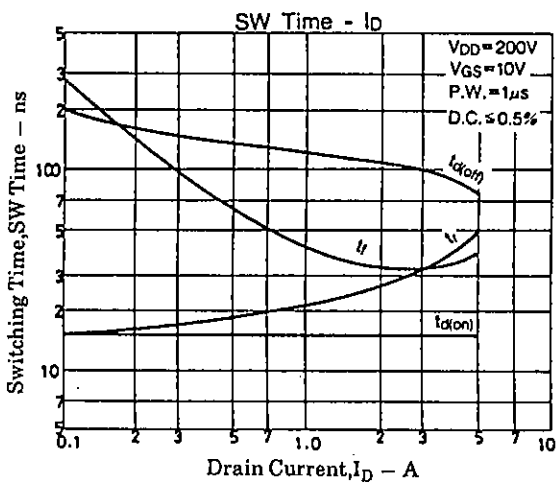

ID - VDS
VGS=10V
6V
5V
4V
Drain Current,ID – A
Drain to Source Voltage,VDS – V

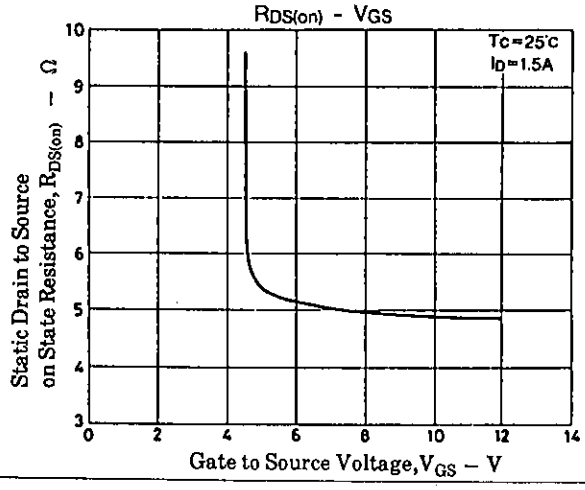

ID - VDS
VGS=10V
6V
5 V
4V
Drain Current,ID – A
Drain to Source Voltage,VDS – V

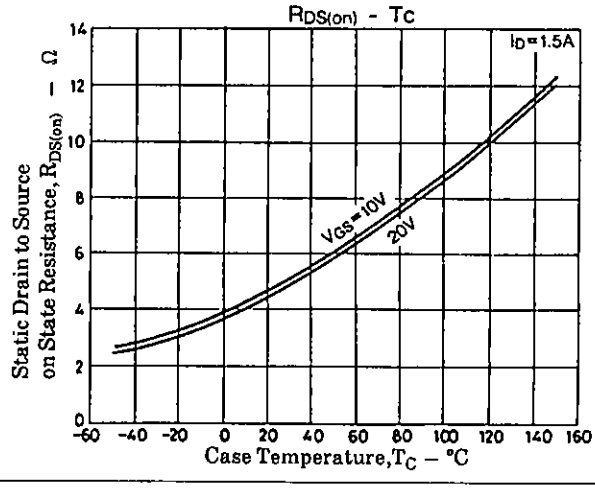

ID - VGS
VDS=20V
Tc=-25°C
25°C
75°C
Drain Current,ID – A
Gate to Source Voltage,VGS – V


ID - Tc
VGS=10V
VDS=20V
10V
Drain Current,ID – A
Case Temperature,TC – °C


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
TC=25°C
ID=1.5A
Static Drain to Source on State Resistance, RDS(on) – Ω
Gate to Source Voltage,VGS – V


RDS(on) - Tc
ID=1.5A
VGS=10V
20V
Static Drain to Source on State Resistance, RDS(on) – Ω
Case Temperature,TC – °C