

<b>SANYO</b>	No.3441	<b>2SK1438</b>
		N-Channel MOS Silicon FET Very High-Speed Switching Applications

**Features**

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

**Absolute Maximum Ratings at Ta = 25°C**

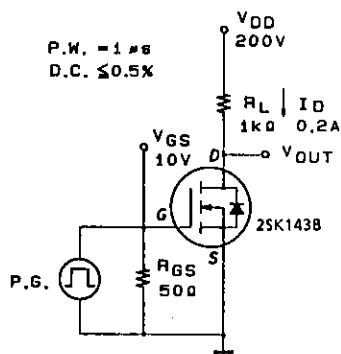
			unit
Drain to Source Voltage	V <sub>DSS</sub>	450	V
Gate to Source Voltage	V <sub>GSS</sub>	±30	V
Drain Current(DC)	I <sub>D</sub>	0.3	A
Drain Current(Pulse)	I <sub>DP</sub>	PW ≤ 10μs, duty cycle ≤ 1%	1.2 A
Allowable Power Dissipation	P <sub>D</sub>	Tc = 25°C	20 W
			1.75 W
Channel Temperature	T <sub>ch</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

**Electrical Characteristics at Ta = 25°C**

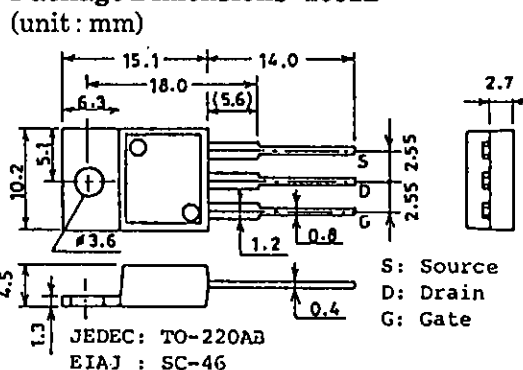
			min	typ	max	unit
D-S Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> = 1mA, V <sub>GS</sub> = 0	450			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 450V, V <sub>GS</sub> = 0			1.0	mA
Gate to Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±30V, V <sub>DS</sub> = 0			±100	nA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> = 10V, I <sub>D</sub> = 1mA	2.0		3.0	V
Forward Transfer Admittance	Y <sub>fs</sub>	V <sub>DS</sub> = 10V, I <sub>D</sub> = 0.2A	0.15	0.3		S
Static Drain to Source on State Resistance	R <sub>DS(on)</sub>	I <sub>D</sub> = 0.2A, V <sub>GS</sub> = 10V		9.0	12	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 20V, f = 1MHz		90		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> = 20V, f = 1MHz		15		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> = 20V, f = 1MHz		4.5		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	I <sub>D</sub> = 0.2A, V <sub>GS</sub> = 10V V <sub>DD</sub> = 200V, R <sub>GS</sub> = 50Ω		10		ns
Rise Time	t <sub>r</sub>		8.0		ns	
Turn-OFF Delay Time	t <sub>d(off)</sub>		40		ns	
Fall Time	t <sub>f</sub>		110		ns	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> = 0.3A, V <sub>GS</sub> = 0			1.8	V

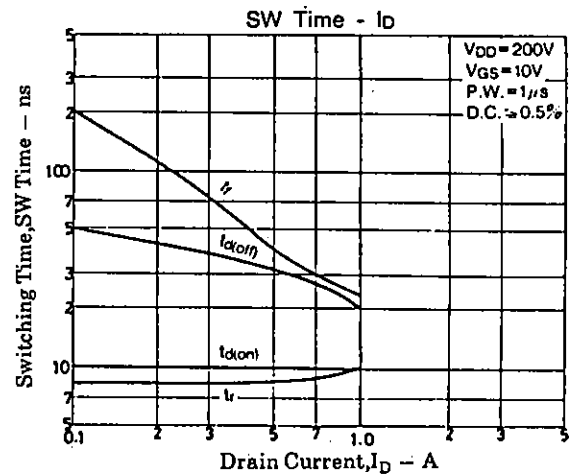
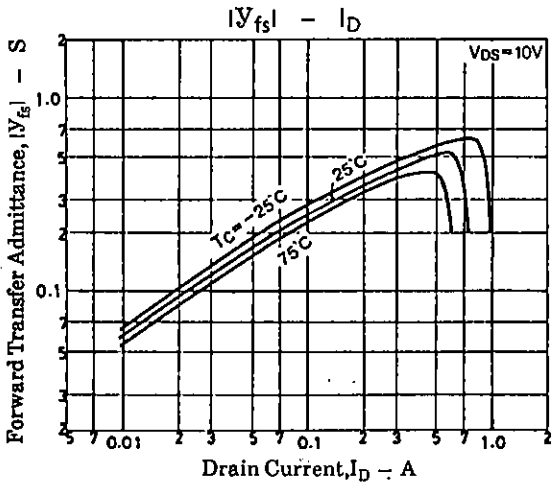
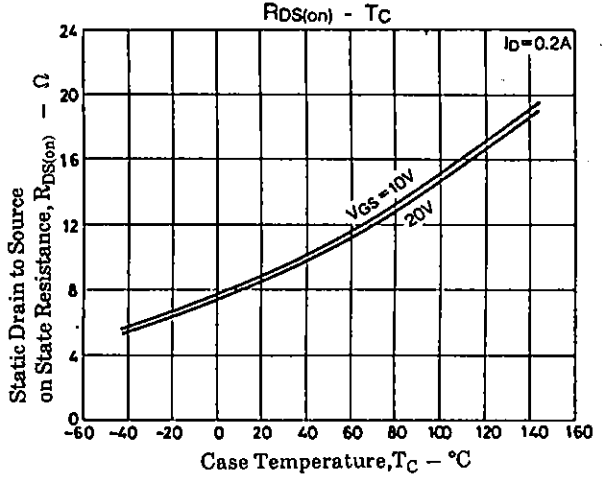
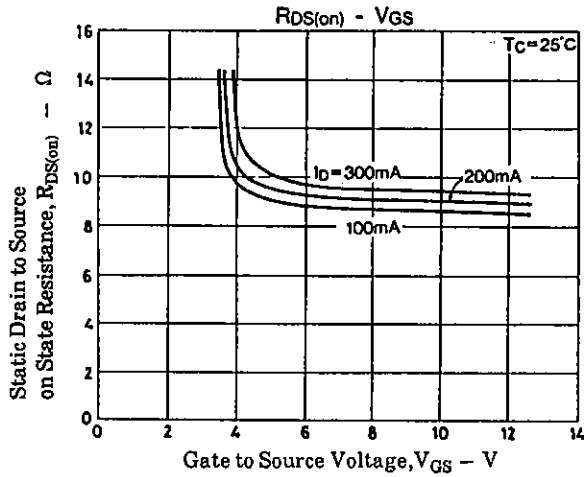
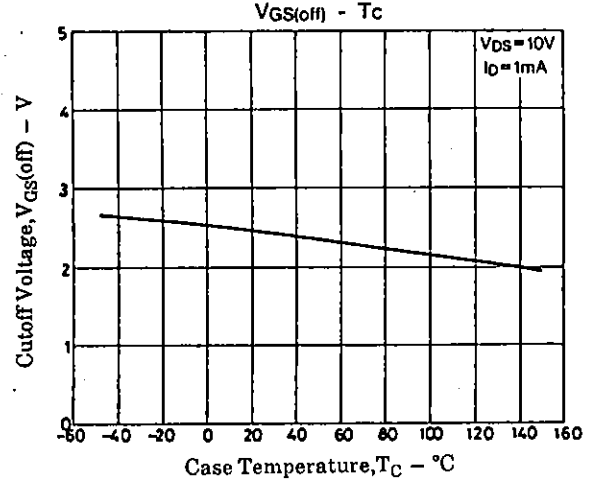
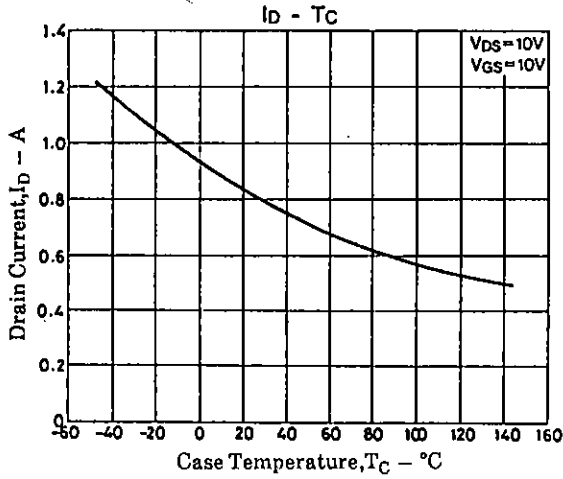
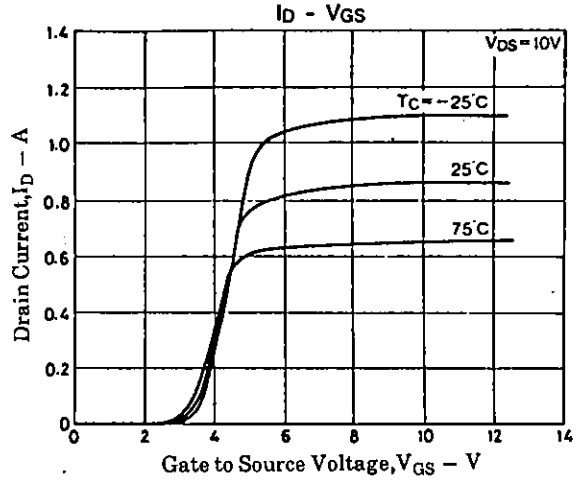
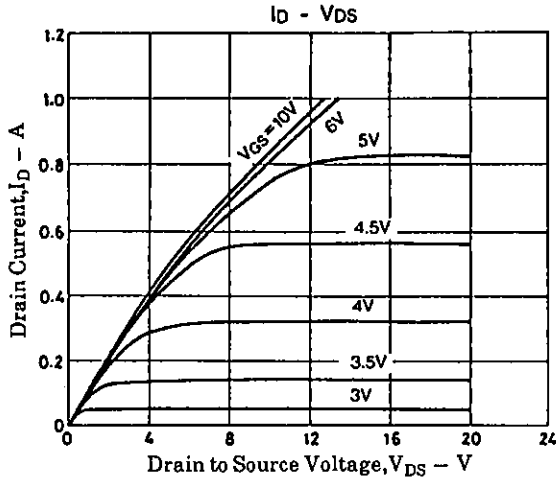
(Note) Be careful in handling the 2SK1438 because it has no protection diode between gate and source.

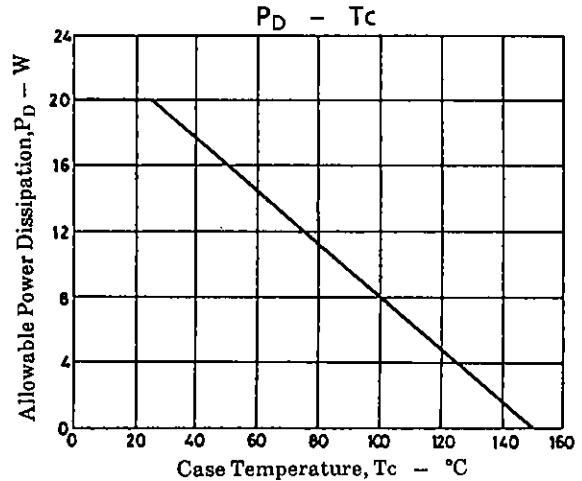
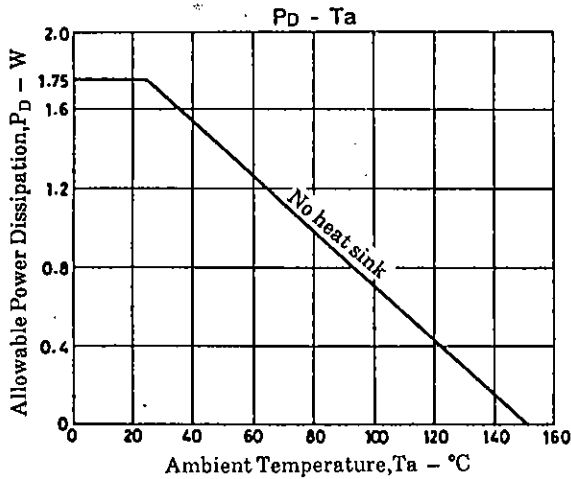
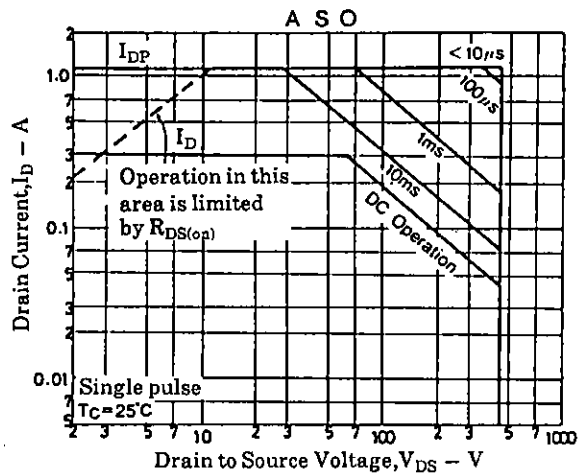
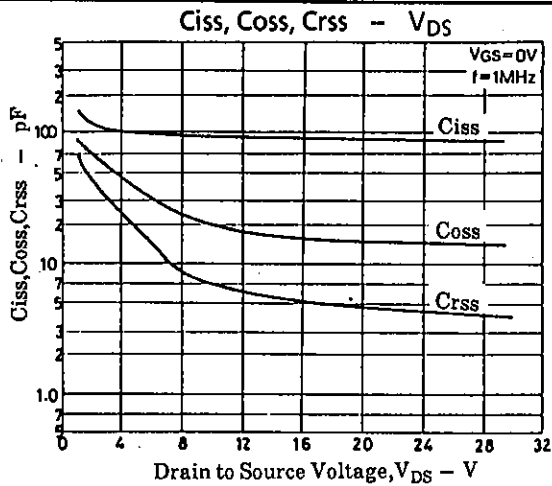
**Switching Time Test Circuit**



**Package Dimensions 2052B**







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