

SANYO

No.3441

2SK1438

N-Channel MOS Silicon FET

Very High-Speed
Switching Applications**Features**

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

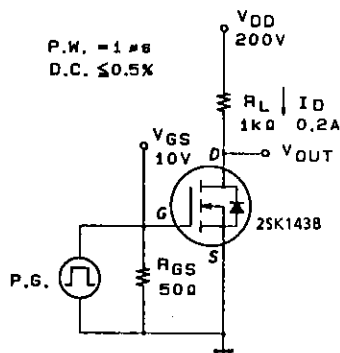
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

			unit
Drain to Source Voltage	V_{DSS}	450	V
Gate to Source Voltage	V_{GSS}	± 30	V
Drain Current(DC)	I_D	0.3	A
Drain Current(Pulse)	I_{DP}	$PW \leq 10\mu s, \text{ duty cycle} \leq 1\%$	1.2 A
Allowable Power Dissipation	P_D	$T_c = 25^\circ\text{C}$	20 W
			1.75 W
Channel Temperature	T_{ch}		150 $^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150 $^\circ\text{C}$

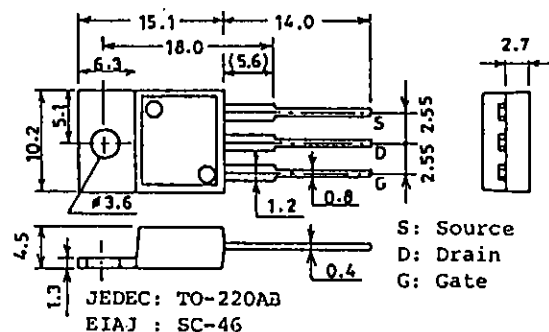
Electrical Characteristics at $T_a = 25^\circ\text{C}$

			min	typ	max	unit
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1\text{mA}, V_{GS} = 0$	450			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 450\text{V}, V_{GS} = 0$			1.0	mA
Gate to Source Leakage Current	I_{GSS}	$V_{GS} = \pm 30\text{V}, V_{DS} = 0$			± 100	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{V}, I_D = 1\text{mA}$	2.0		3.0	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 10\text{V}, I_D = 0.2\text{A}$	0.15	0.3		S
Static Drain to Source on State Resistance	$R_{DS(on)}$	$I_D = 0.2\text{A}, V_{GS} = 10\text{V}$		9.0	12	Ω
Input Capacitance	C_{iss}	$V_{DS} = 20\text{V}, f = 1\text{MHz}$		90		pF
Output Capacitance	C_{oss}	$V_{DS} = 20\text{V}, f = 1\text{MHz}$		15		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 20\text{V}, f = 1\text{MHz}$		4.5		pF
Turn-ON Delay Time	$t_{d(on)}$	$I_D = 0.2\text{A}, V_{GS} = 10\text{V}$ $V_{DD} = 200\text{V}, R_{GS} = 50\Omega$		10		ns
Rise Time	t_r		8.0		ns	
Turn-OFF Delay Time	$t_{d(off)}$		40		ns	
Fall Time	t_f		110		ns	
Diode Forward Voltage	V_{SD}	$I_S = 0.3\text{A}, V_{GS} = 0$			1.8	V

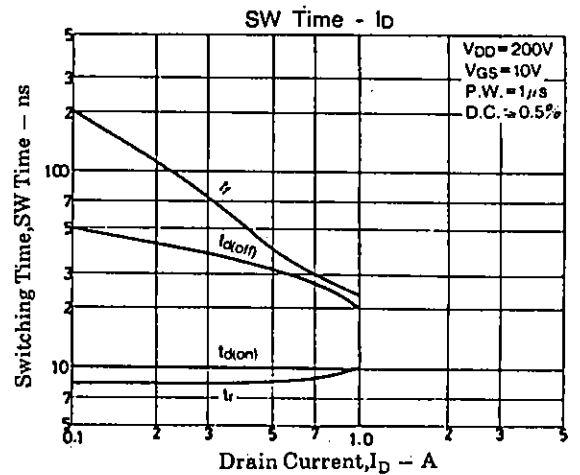
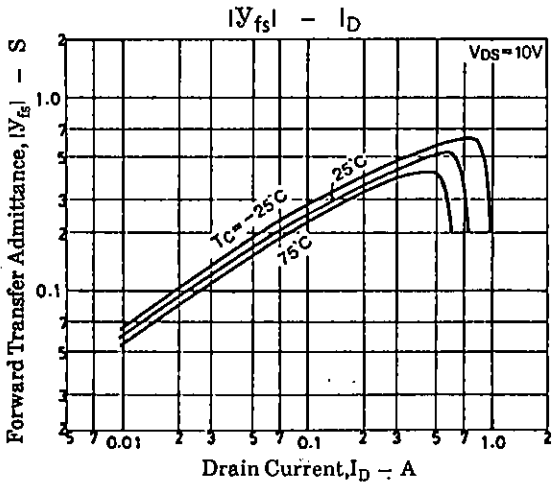
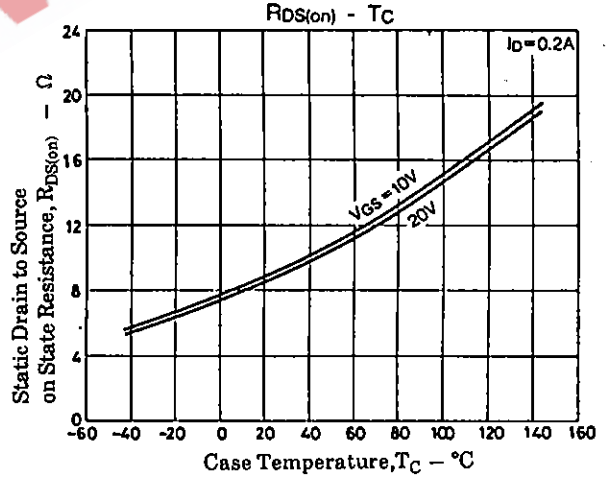
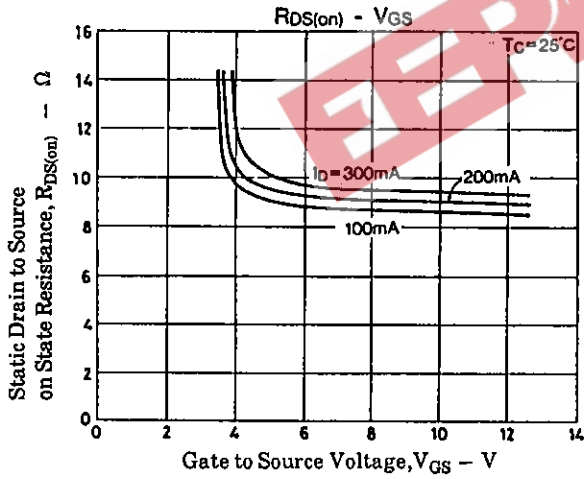
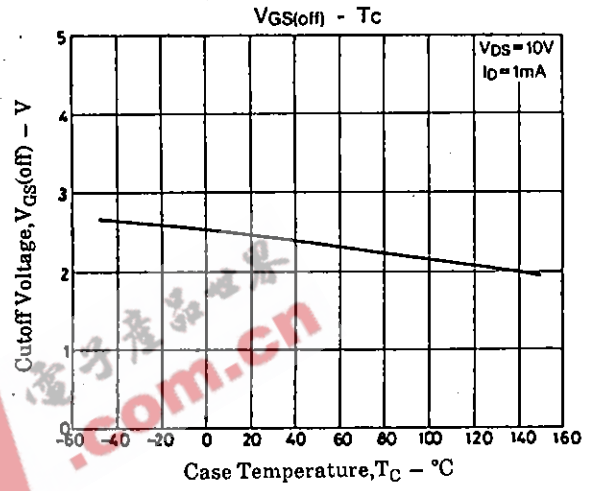
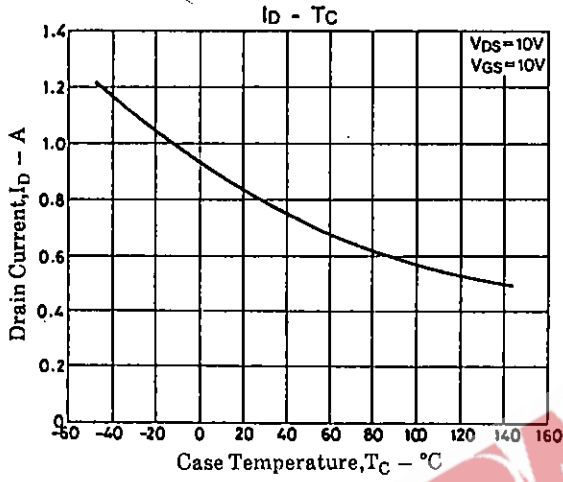
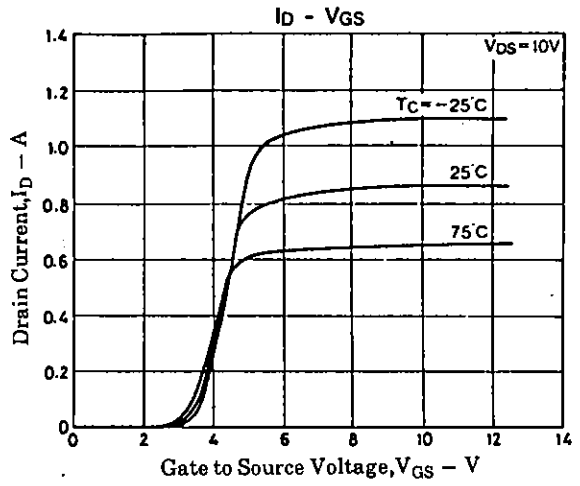
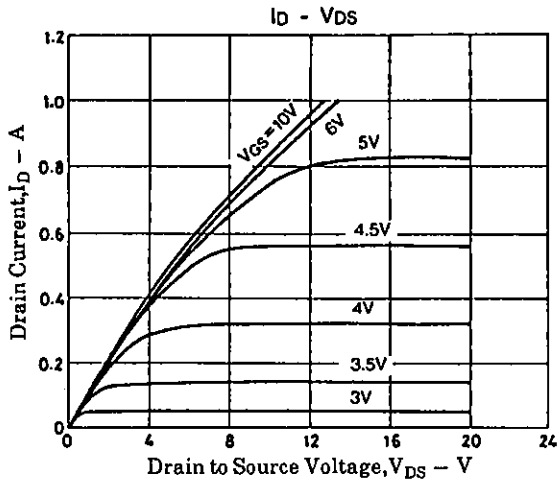
(Note) Be careful in handling the 2SK1438 because it has no protection diode between gate and source.

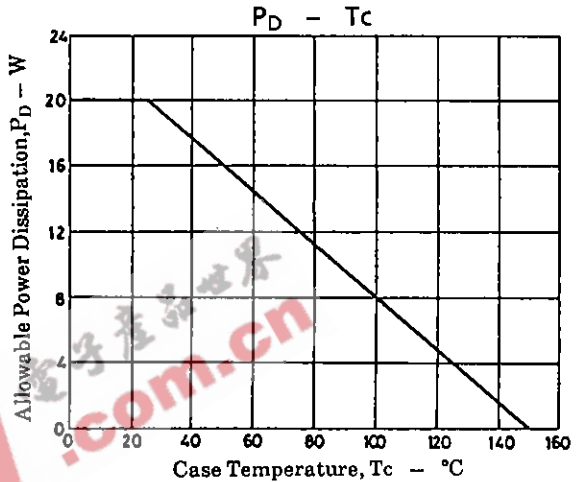
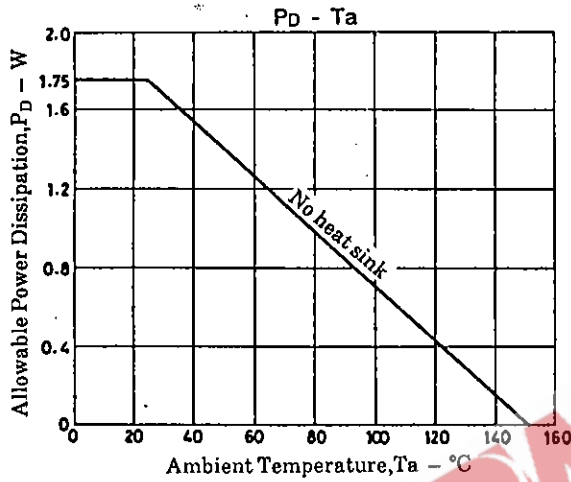
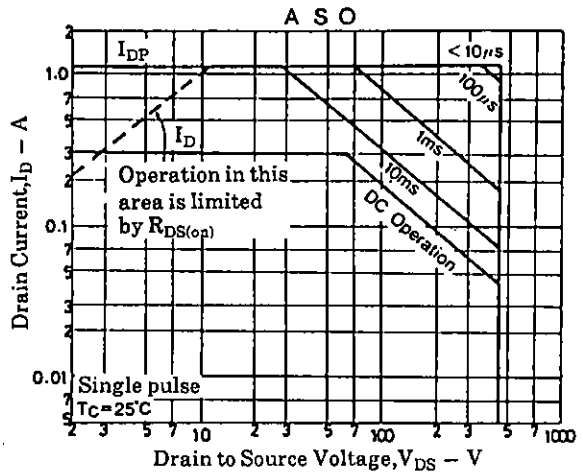
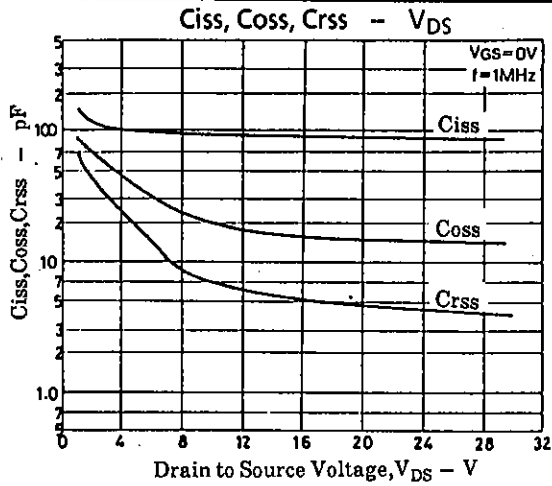
Switching Time Test Circuit**Package Dimensions 2052B**

(unit: mm)



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