

<b>SANYO</b>	No.3445	<b>2SK1442</b>
		N-Channel MOS Silicon FET Very High-Speed Switching Applications

### Features

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

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

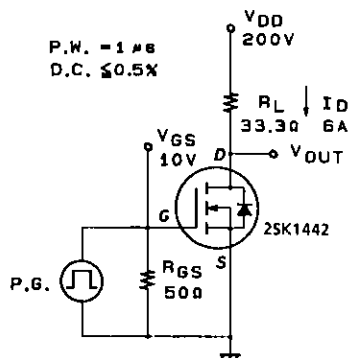
			unit
Drain to Source Voltage	$V_{DSS}$	450	V
Gate to Source Voltage	$V_{GSS}$	$\pm 30$	V
Drain Current(DC)	$I_D$	12	A
Drain Current(Pulse)	$I_{DP}$	$PW \leq 10\mu s, \text{ duty cycle} \leq 1\%$	48
Allowable Power Dissipation	$P_D$	$T_c = 25^\circ\text{C}$	70
			1.75
Channel Temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

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

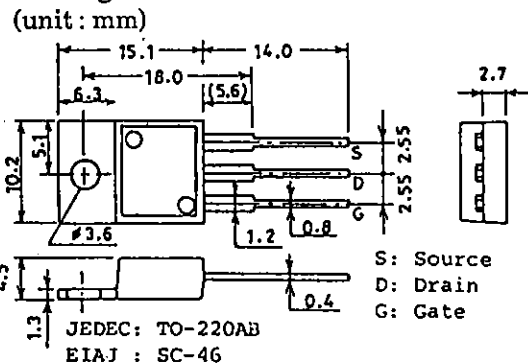
			min	typ	max	unit
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1\text{mA}, V_{GS} = 0$	450			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 450\text{V}, V_{GS} = 0$			1.0	mA
Gate to Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 30\text{V}, V_{DS} = 0$			$\pm 100$	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{V}, I_D = 1\text{mA}$	2.0		3.0	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 10\text{V}, I_D = 6\text{A}$	4.0	8.0		S
Static Drain to Source on State Resistance	$R_{DS(on)}$	$I_D = 6\text{A}, V_{GS} = 10\text{V}$	0.47	0.6		$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = 20\text{V}, f = 1\text{MHz}$		1600		pF
Output Capacitance	$C_{oss}$	$V_{DS} = 20\text{V}, f = 1\text{MHz}$		220		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = 20\text{V}, f = 1\text{MHz}$		80		pF
Turn-ON Delay Time	$t_{d(on)}$	$I_D = 6\text{A}, V_{GS} = 10\text{V}$ $V_{DD} = 200\text{V}, R_{GS} = 50\Omega$		25		ns
Rise Time	$t_r$		60		ns	
Turn-OFF Delay Time	$t_{d(off)}$		250		ns	
Fall Time	$t_f$		80		ns	
Diode Forward Voltage	$V_{SD}$	$I_S = 12\text{A}, V_{GS} = 0$			1.8	V

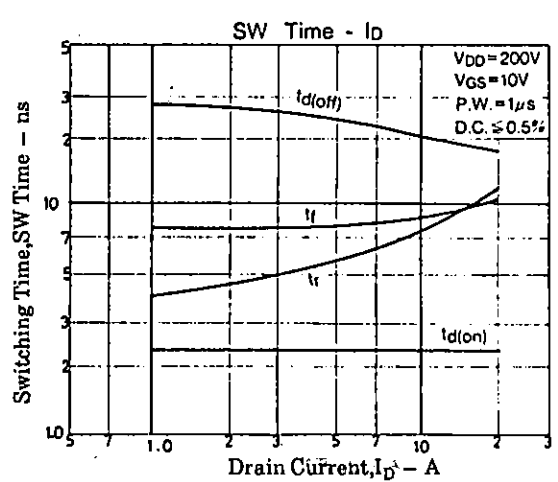
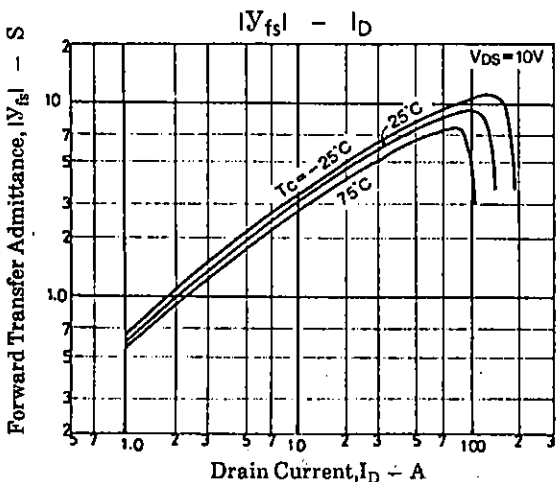
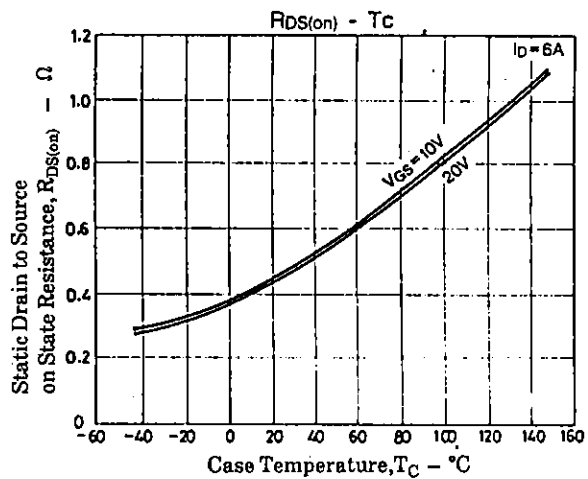
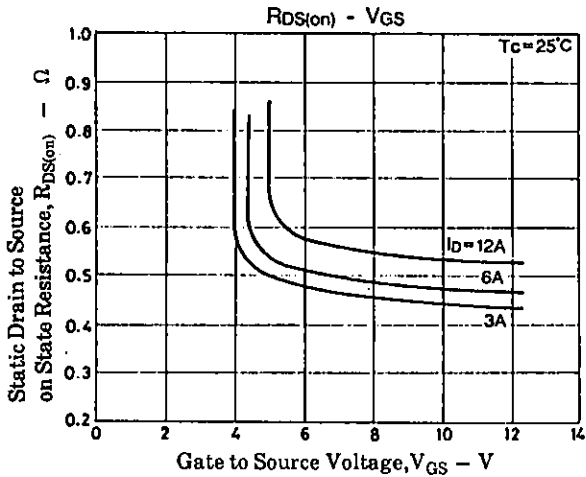
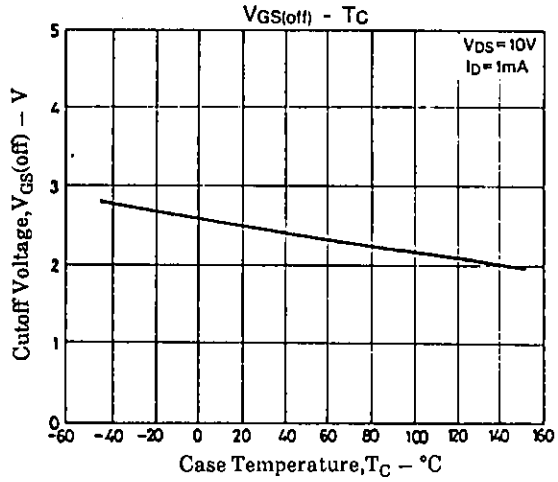
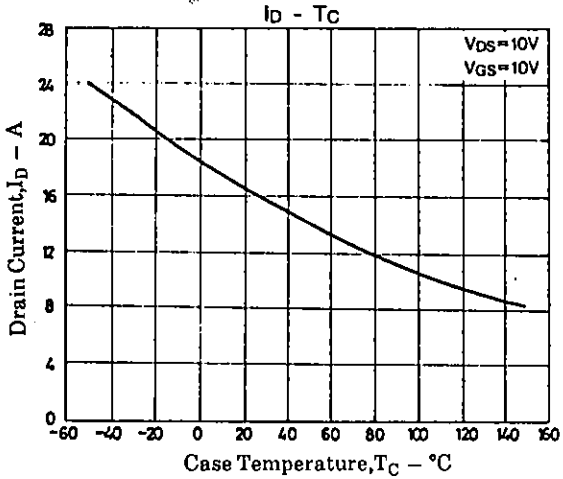
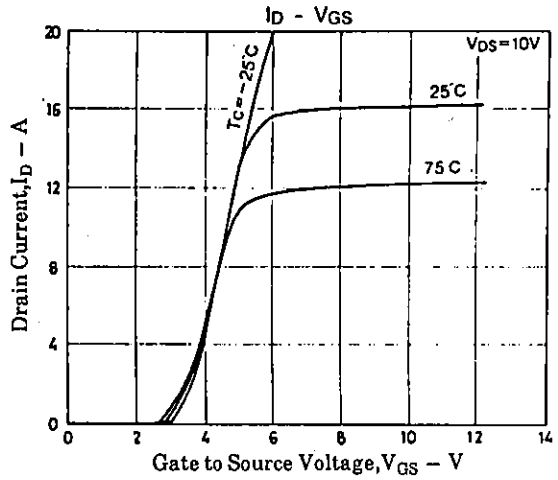
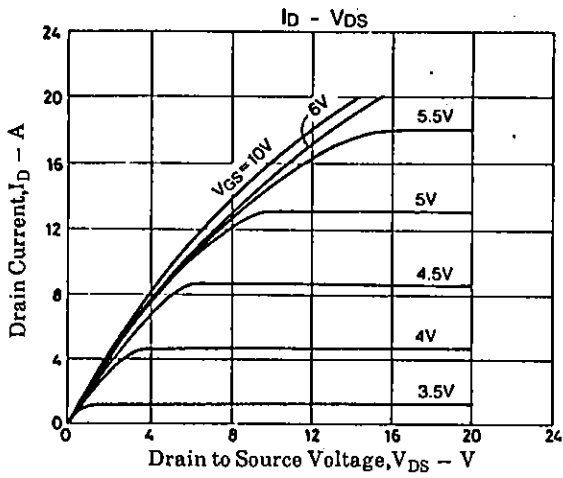
(Note) Be careful in handling the 2SK1442 because it has no protection diode between gate and source.

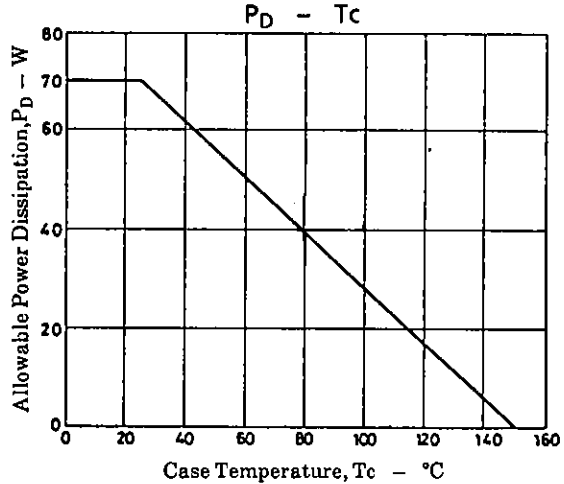
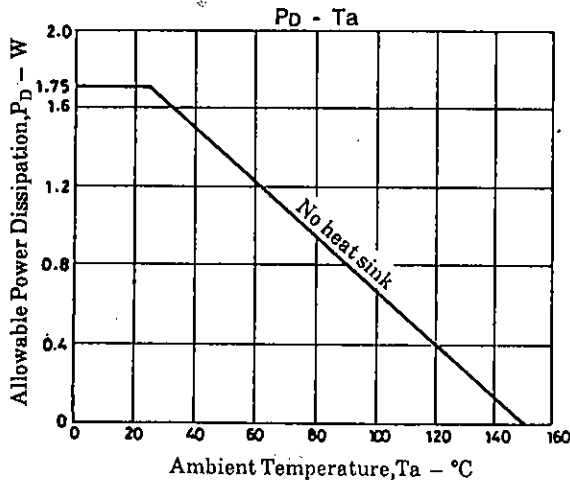
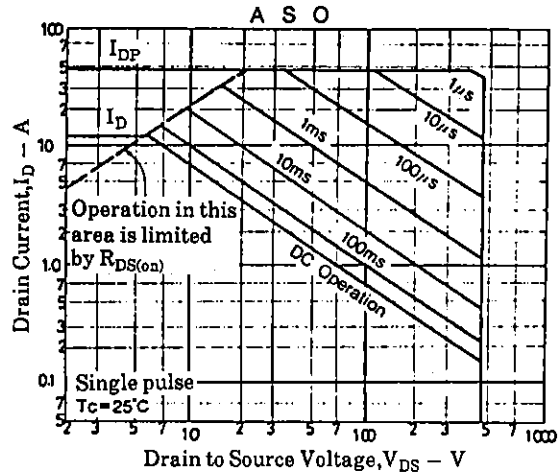
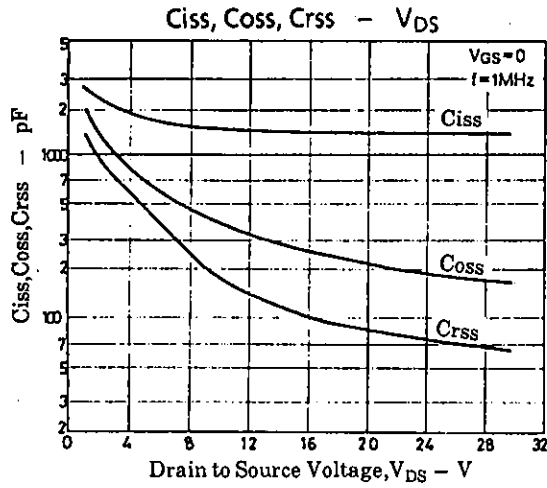
### Switching Time Test Circuit



### Package Dimensions 2052B







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