

	No. 3565	2SK1427 N-Channel MOS Silicon FET Very High-Speed Switching Applications

Features

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

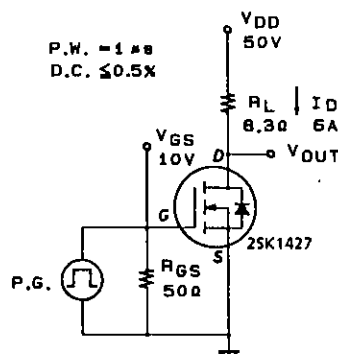
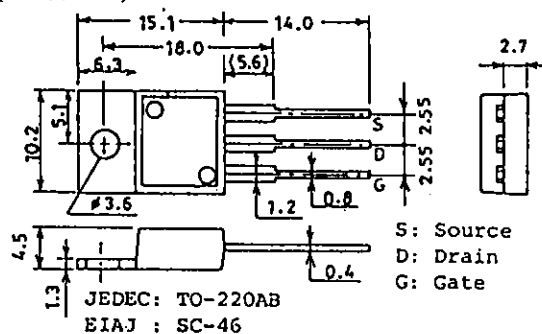
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

			unit
Drain to Source Voltage	V_{DSS}	100	V
Gate to Source Voltage	V_{GSS}	± 20	V
Drain Current(DC)	I_D	10	A
Drain Current(Pulse)	I_{DP}	$PW \leq 10\mu s, \text{duty cycle} \leq 1\%$	A
Allowable Power Dissipation	P_D	$T_c = 25^\circ\text{C}$	40 W
		1.75	W
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-55 \text{ to } +150$	$^\circ\text{C}$

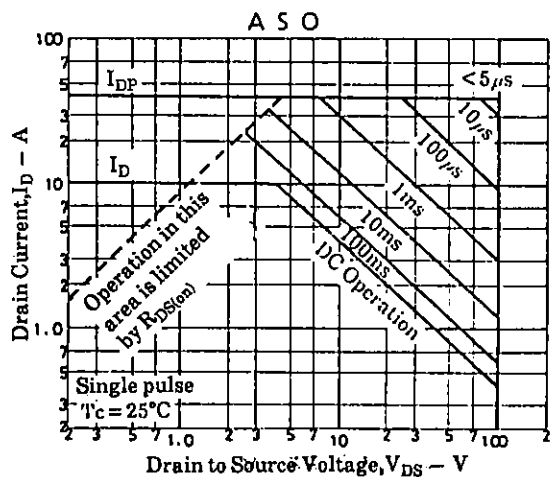
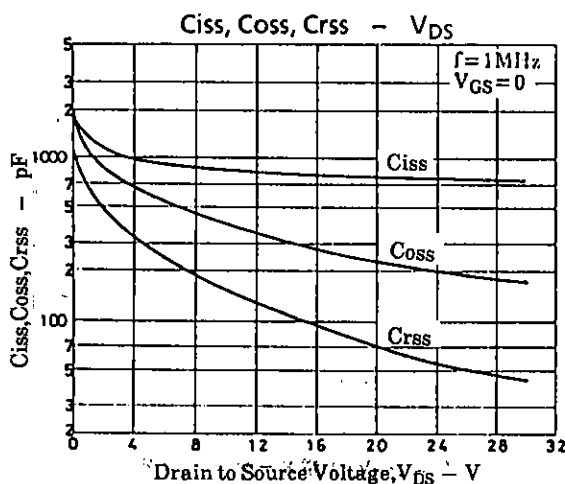
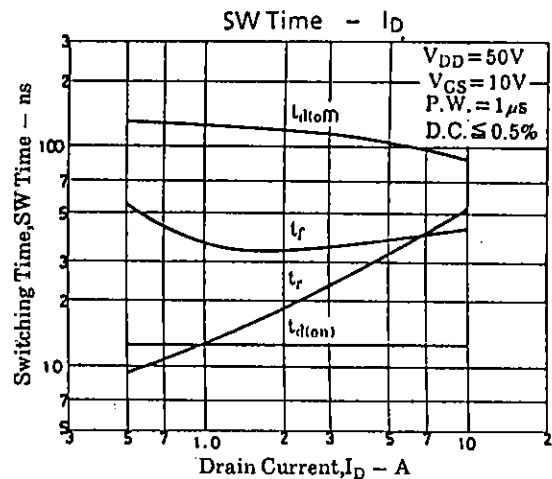
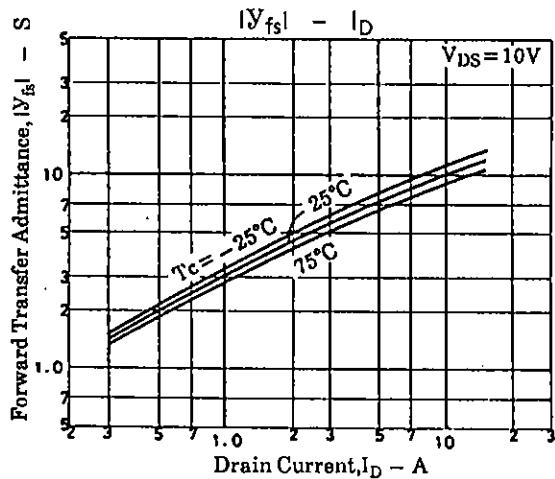
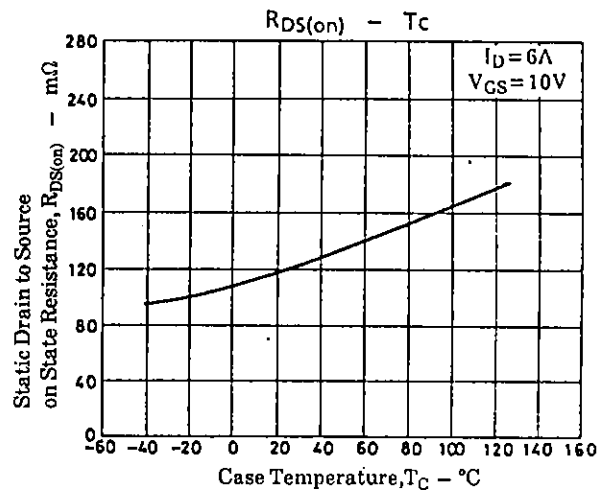
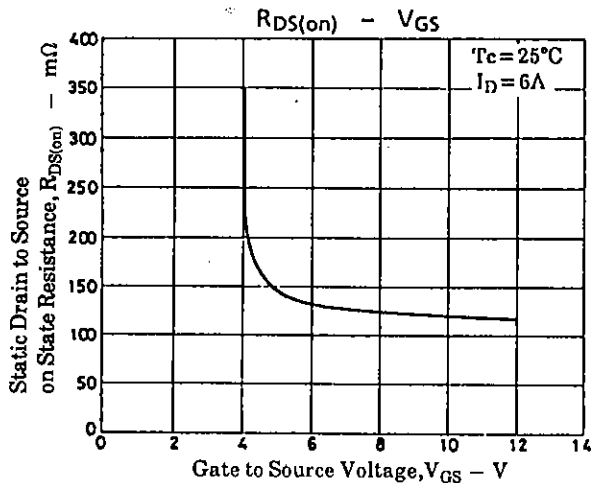
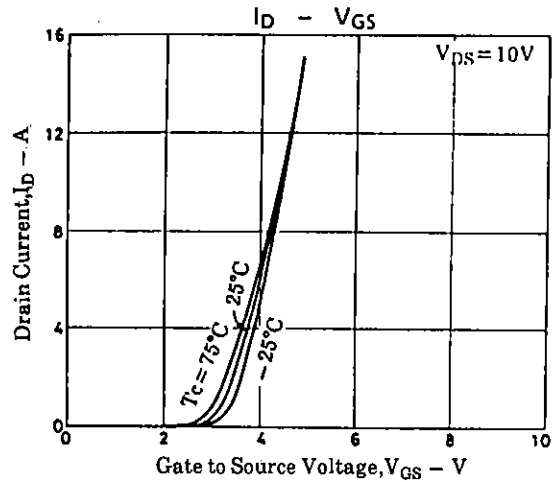
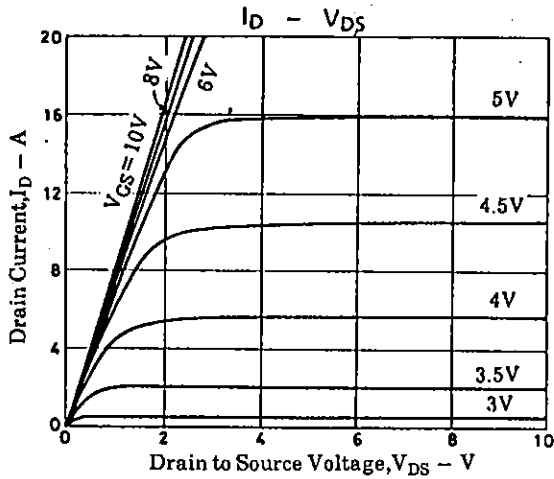
Electrical Characteristics at $T_a = 25^\circ\text{C}$

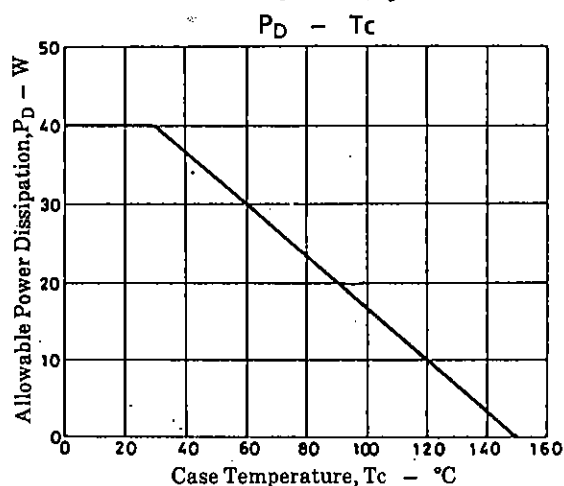
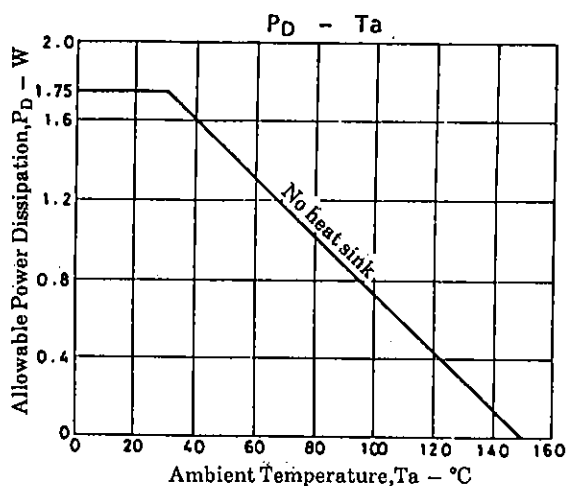
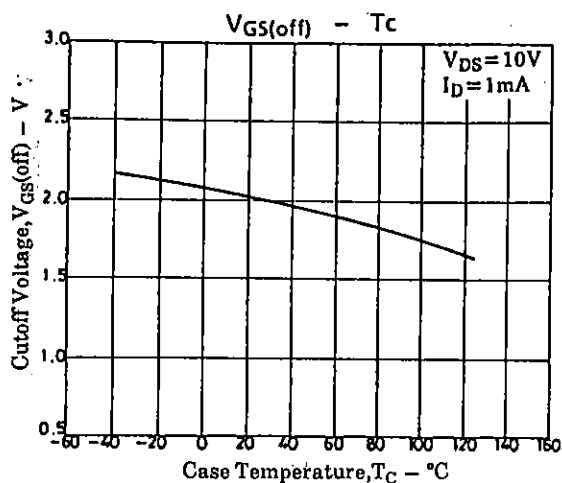
			min	typ	max	unit
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1\text{mA}, V_{GS} = 0$	100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 100\text{V}, V_{GS} = 0$			100	μA
Gate to Source Leakage Current	I_{GSS}	$V_{GS} = \pm 20\text{V}, V_{DS} = 0$			± 100	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{V}, I_D = 1\text{mA}$	1.5		2.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 10\text{V}, I_D = 6\text{A}$	5.0	8.0		S
Static Drain to Source on State Resistance	$R_{DS(on)}$	$I_D = 6\text{A}, V_{GS} = 10\text{V}$	0.12	0.16		Ω
Input Capacitance	C_{iss}	$V_{DS} = 20\text{V}, f = 1\text{MHz}$		750		pF
Output Capacitance	C_{oss}	$V_{DS} = 20\text{V}, f = 1\text{MHz}$		230		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 20\text{V}, f = 1\text{MHz}$		70		pF
Turn-ON Delay Time	$t_{d(on)}$	$I_D = 6\text{A}, V_{GS} = 10\text{V}$ $V_{DD} = 50\text{V}, R_{GS} = 50\Omega$		12		ns
Rise Time	t_r			38		ns
Turn-OFF Delay Time	$t_{d(off)}$			100		ns
Fall Time	t_f			40		ns
Diode Forward Voltage	V_{SD}	$I_S = 10\text{A}, V_{GS} = 0$			1.8	V

(Note) Be careful in handling the 2SK1427 because it has no protection diode between gate and source.

Switching Time Test Circuit**Package Dimensions 2052B (unit: mm)**

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