

SANYO

No. 3569

2SK1431

N-Channel MOS Silicon FET

Very High-Speed
Switching Applications**Features**

- Low ON-state resistance.
- Very high-speed switching.
- Converters.
- Micaless package facilitating easy mounting.

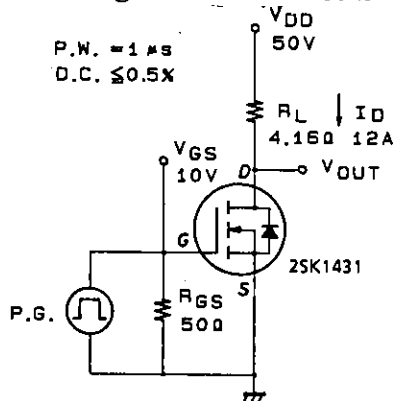
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

			unit
Drain to Source Voltage	V_{DSS}	100	V
Gate to Source Voltage	V_{GSS}	± 20	V
Drain Current(DC)	I_D	15	A
Drain Current(Pulse)	I_{DP}	$PW \leq 10\mu s, \text{ duty cycle} \leq 1\%$	A
Allowable Power Dissipation	P_D	$T_c = 25^\circ\text{C}$	30 W
			2.0 W
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

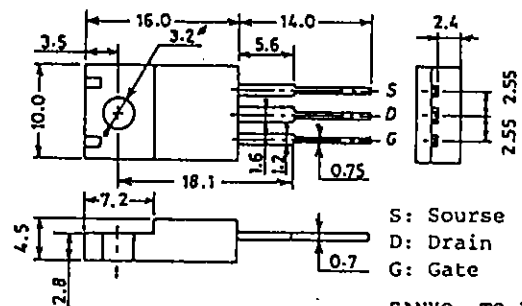
Electrical Characteristics at $T_a = 25^\circ\text{C}$

			min	typ	max	unit
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1\text{mA}, V_{GS} = 0$	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} $	$V_{DS} = 10\text{V}, I_D = 12\text{A}$	8.0	14		S
Static Drain to Source on State Resistance	$R_{DS(on)}$	$I_D = 12\text{A}, V_{GS} = 10\text{V}$	0.075	0.10		Ω
Input Capacitance	C_{iss}	$V_{DS} = 20\text{V}, f = 1\text{MHz}$		1200		pF
Output Capacitance	C_{oss}	$V_{DS} = 20\text{V}, f = 1\text{MHz}$		350		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 20\text{V}, f = 1\text{MHz}$		100		pF
Turn-ON Delay Time	$t_{d(on)}$	$I_D = 12\text{A}, V_{GS} = 10\text{V}$ $V_{DD} = 50\text{V}, R_{GS} = 50\Omega$		18		ns
Rise Time	t_r		52	ns		
Turn-OFF Delay Time	$t_{d(off)}$		140	ns		
Fall Time	t_f		70	ns		
Diode Forward Voltage	V_{SD}	$I_S = 15\text{A}, V_{GS} = 0$			1.8	V

(Note) Be careful in handling the 2SK1431 because it has no protection diode between gate and source.

Switching Time Test Circuit**Package Dimensions 2063**

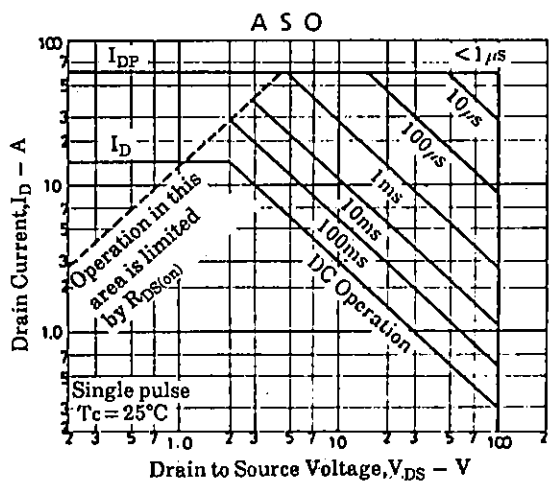
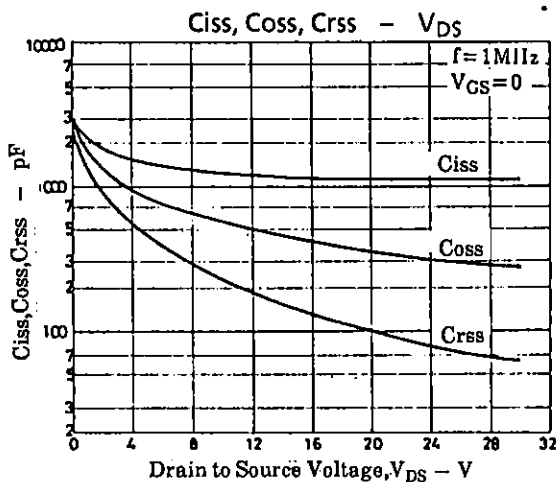
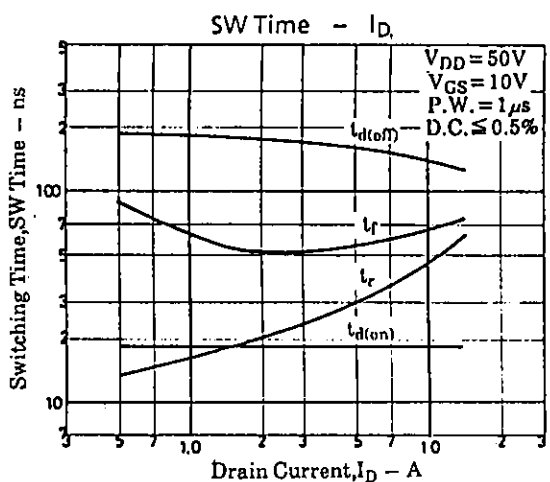
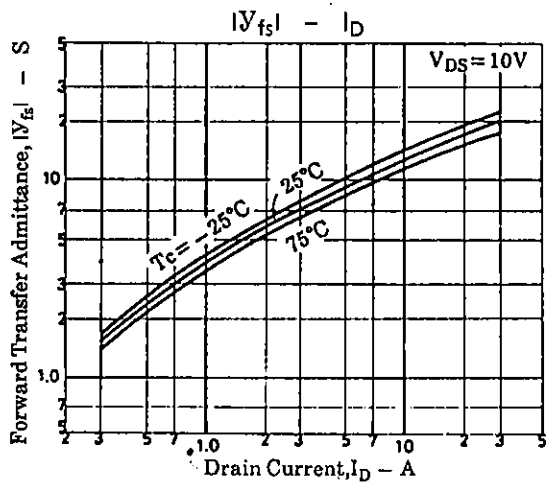
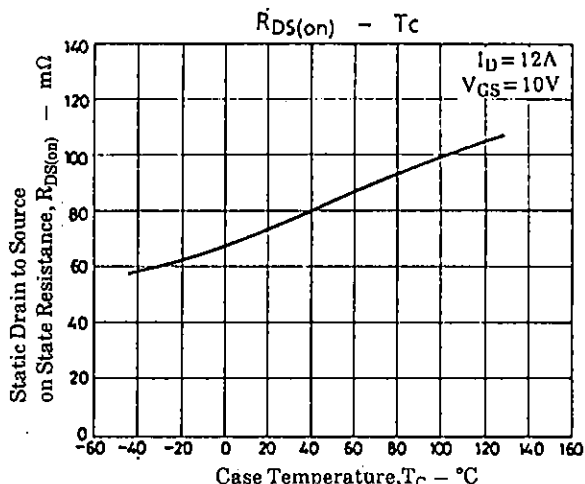
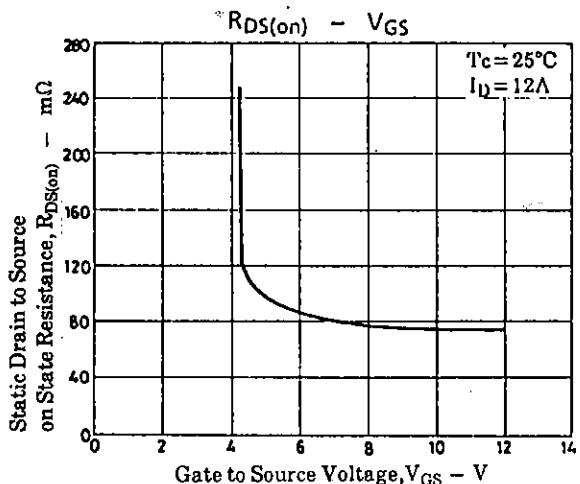
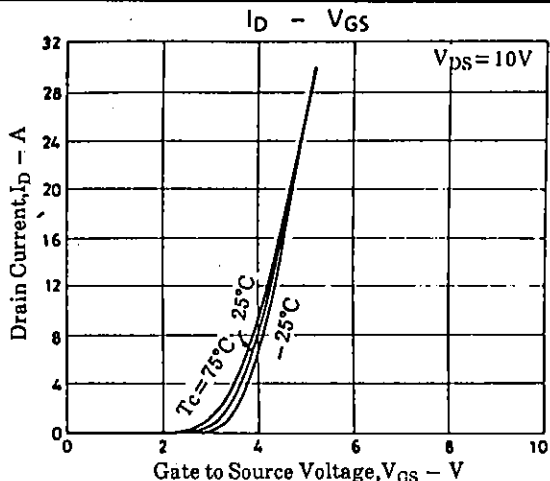
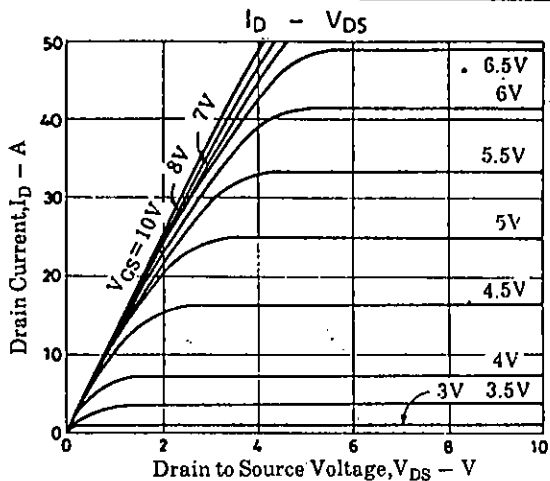
(unit: mm)

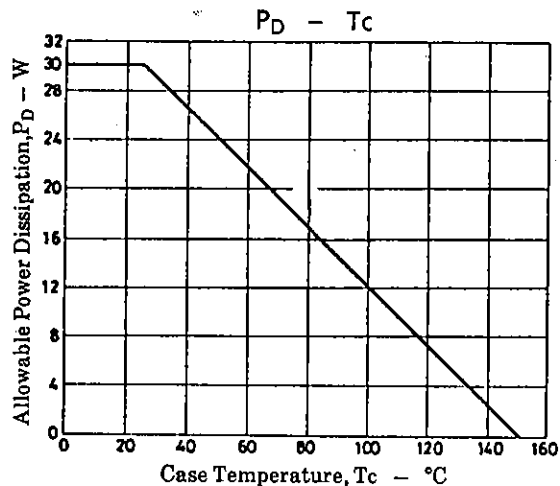
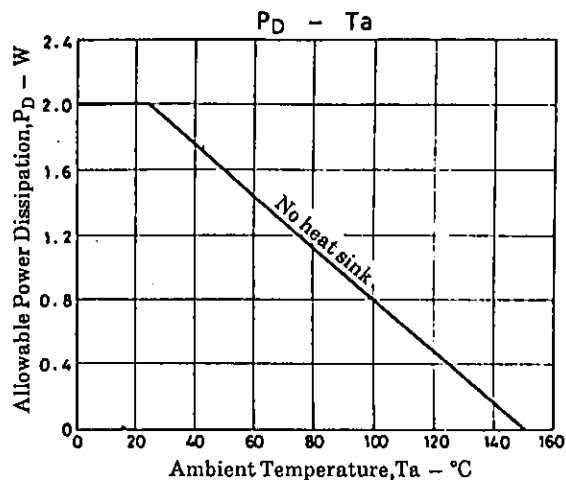
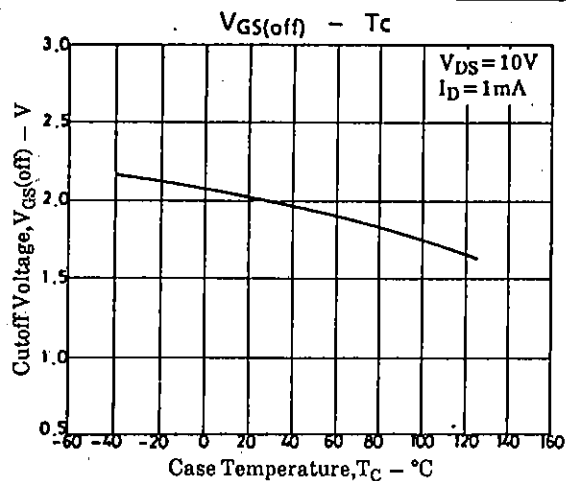
S: Source
D: Drain
G: Gate

SANYO: TO-220ML

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