



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 Ta = 25°C

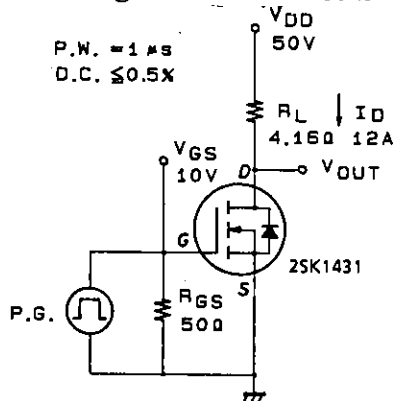
			unit
Drain to Source Voltage	V _{DSS}	100	V
Gate to Source Voltage	V _{GSS}	±20	V
Drain Current(DC)	I _D	15	A
Drain Current(Pulse)	I _{DP}	PW ≤ 10μs, duty cycle ≤ 1%	
Allowable Power Dissipation	P _D	30	W
		2.0	W
Channel Temperature	T _{ch}	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

Electrical Characteristics at Ta = 25°C

			min	typ	max	unit
D-S Breakdown Voltage	V _{(BR)DSS}	I _D = 1mA, V _{GS} = 0	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 100V, V _{GS} = 0			100	μA
Gate to Source Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0			±100	nA
Cutoff Voltage	V _{GS(off)}	V _{DS} = 10V, I _D = 1mA	1.5		2.5	V
Forward Transfer Admittance	Y _{fs}	V _{DS} = 10V, I _D = 12A	8.0	14		S
Static Drain to Source on State Resistance	R _{DS(on)}	I _D = 12A, V _{GS} = 10V	0.075	0.10		Ω
Input Capacitance	C _{iss}	V _{DS} = 20V, f = 1MHz		1200		pF
Output Capacitance	C _{oss}	V _{DS} = 20V, f = 1MHz		350		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} = 20V, f = 1MHz		100		pF
Turn-ON Delay Time	t _{d(on)}	I _D = 12A, V _{GS} = 10V V _{DD} = 50V, R _{GS} = 50Ω		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 = 15A, V _{GS} = 0			1.8	V

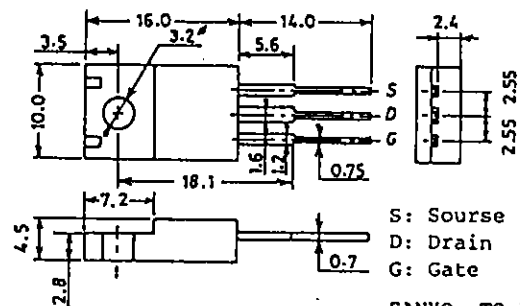
(Note) Be careful in handling the 2SK1431 because it has no protection diode between gate and source.

Switching Time Test Circuit



Package Dimensions 2063

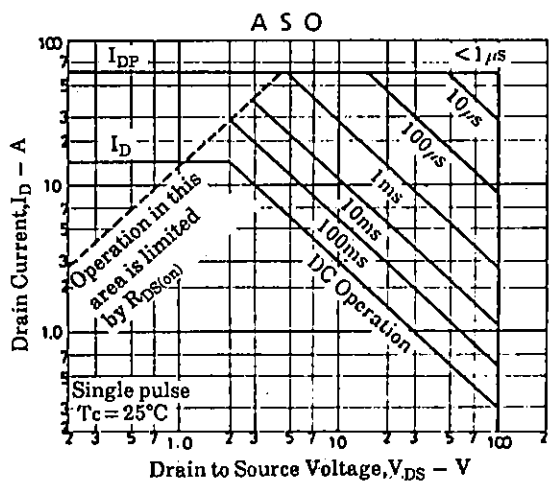
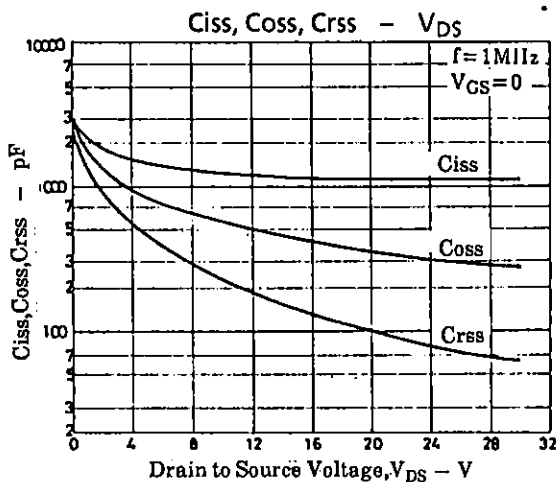
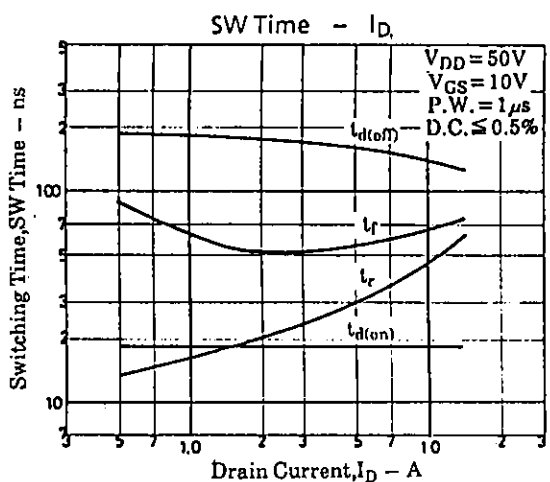
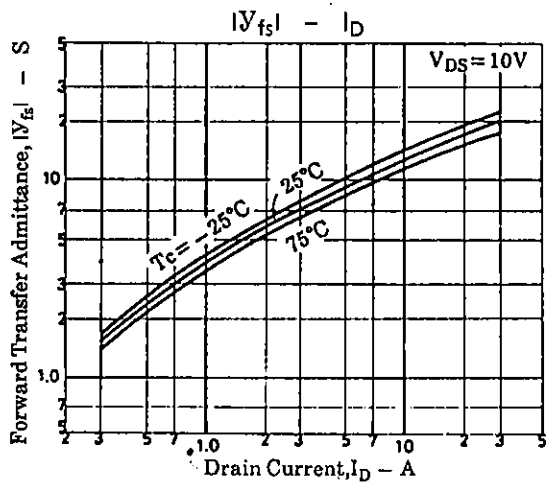
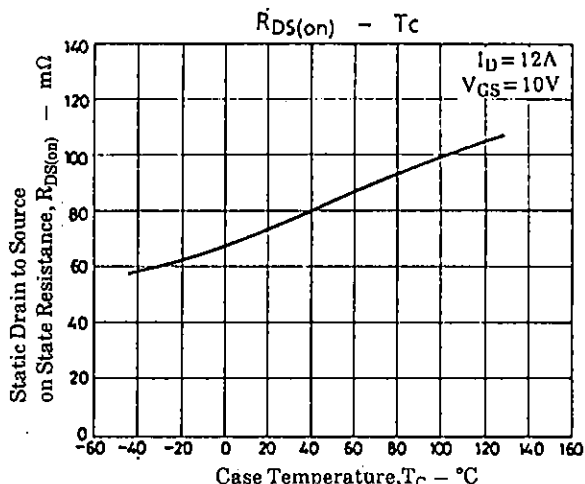
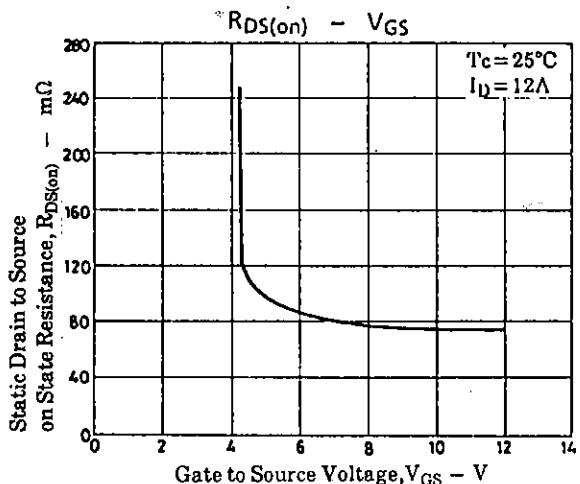
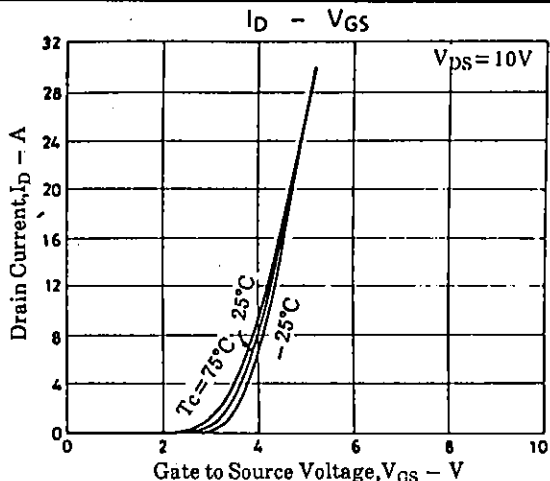
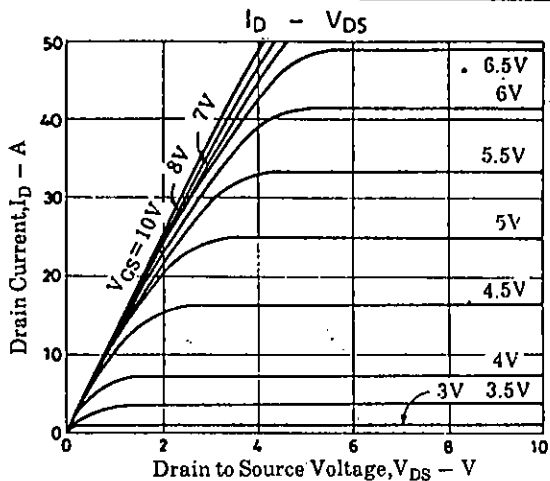
(unit: mm)

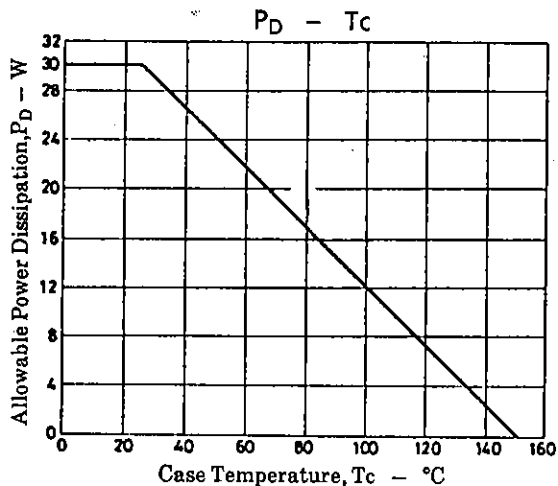
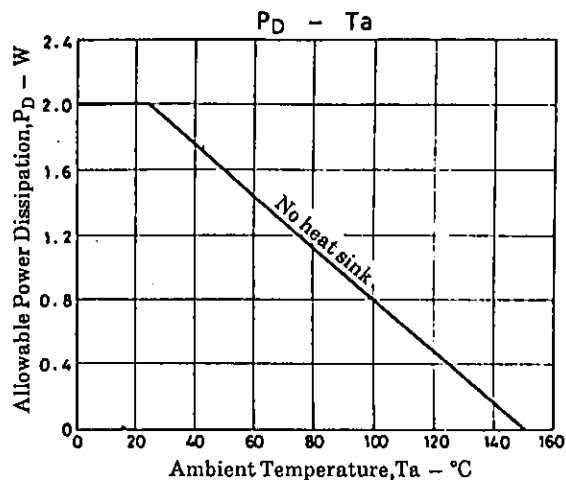
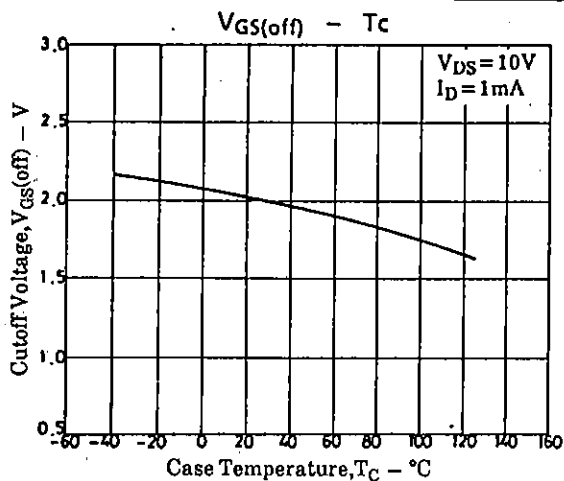


S: Source
D: Drain
G: Gate

SANYO: TO-220ML

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