



2SK2533 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- High-speed diode.
- Enables simplified fabrication, high-density mounding, and miniaturization in end products due to the surface mountable package.
- High-speed switching.

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		250	V
Gate-to-Source Voltage	V_{GSS}		± 30	V
Drain Current	I_D		12	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	48	A
Allowable Power Dissipation	P_D	$T_c=25^\circ\text{C}$	45	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0\text{V}$	250			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = \pm 100\mu\text{A}$, $V_{DS}=0\text{V}$	± 30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=250\text{V}$, $V_{GS}=0\text{V}$			1.0	mA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 25\text{V}$, $V_{DS}=0\text{V}$			± 10	μA
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} $	$V_{DS}=10\text{V}$, $I_D=6\text{A}$	6.0	10		S

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2SK2533

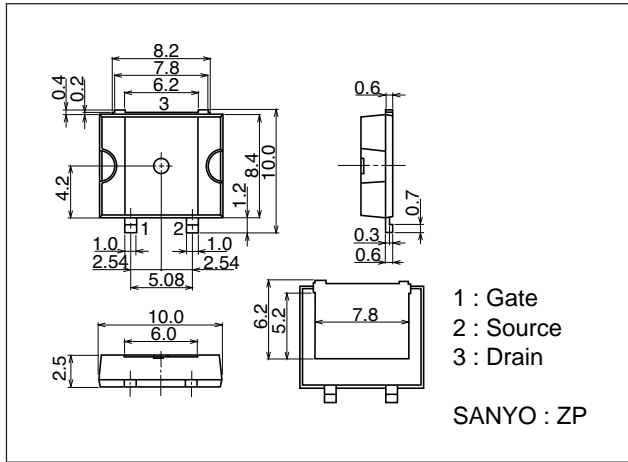
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=6A, V_{GS}=10V$		200	270	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		1290		pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$		300		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$		125		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		22		ns
Rise Time	t_r	See specified Test Circuit.		66		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		320		ns
Fall Time	t_f	See specified Test Circuit.		105		ns
Diode Forward Voltage	V_{SD}	$I_S=13A, V_{GS}=0V$		1.0	1.5	V
Diode Reverse Recovery Time	t_{rr}	$I_S=13A, di/dt=100A/\mu s$		160		ns

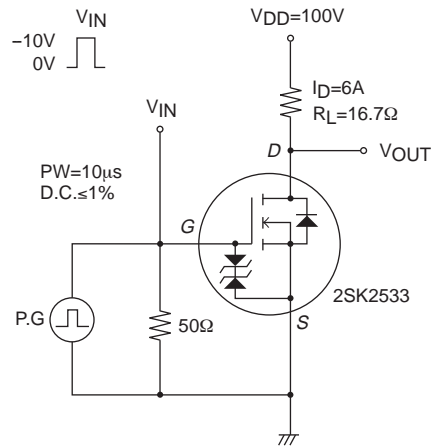
Package Dimensions

unit : mm

7002-001



Switching Time Test Circuit



Note on usage : Since the 2SK2533 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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