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ESD



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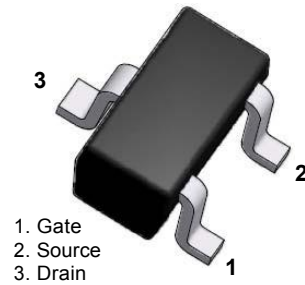
Product data sheet

www.msksemi.com

Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Continuous Gate-Source Voltage	$\pm 20\text{V}$	V
I_D	Continuous Drain Current	100	mA
P_D	Power Dissipation	150	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	833	$^\circ\text{C}/\text{W}$
T_{STG}	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
T_J	Operating Junction Temperature	+150	$^\circ\text{C}$

These ratings are limiting values above which the serviceability of the device may be impaired.

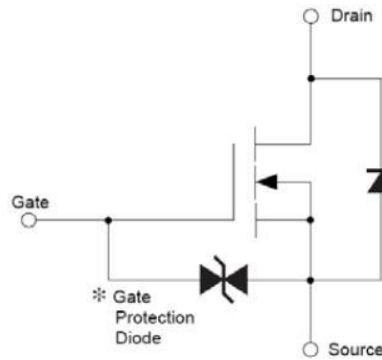


SOT-523

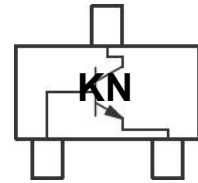
Specification Features:

- Low On-resistance
- Fast Switching Speed
- Low Voltage Drive Makes This Device Ideal for Portable Equipment
- Easily Designed Drive Circuits
- Easy to Parallel
- RoHS Compliant & Green EMC
- Matte Tin(Sn) Lead Finish
- Weight: approx. 0.002g

Electrical Symbol:



Device Marking Code:



Off Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=10\mu A$	30			Volts
I_{GSS}	Gate-Body Leakage	$V_{DS}=0V, V_{GS}=\pm 20V$			± 1	μA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=30V, V_{GS}=0V$			1	μA

On Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
$V_{th(GS)}$	Gate-Threshold Voltage	$V_{DS}= 3V, I_D=100\mu A$	0.8		1.5	Volts
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=4V, I_D=10mA$			8	Ω
		$V_{GS}=2.5V, I_D=1mA$			13	Ω
g_{fs}	Forward Trans Conductance	$V_{DS}=3V, I_D=10mA$	20			ms
V_{SD}	Drain-Source Diode Forward Voltage	$I_S=115mA, V_{GS}=0V$			1.2	V

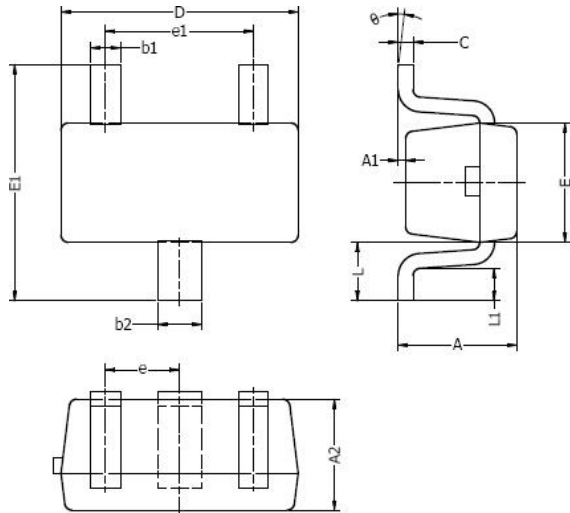
Dynamic Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
C_{iss}	Input Capacitance	$V_{DS} = 5V$ $V_{GS} = 0V$ $f = 1.0MHz$		13		pF
C_{oss}	Output Capacitance			9		pF
C_{rss}	Reverse Transfer Capacitance			4		pF

Switching Characteristics

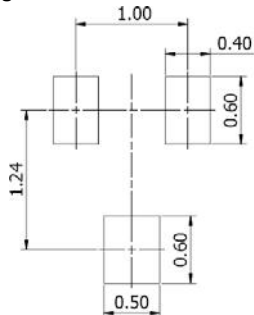
Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
$t_{D(on)}$	Turn-on Time	$V_{DD}=5V, R_L=500\Omega,$ $I_D=10mA, V_{GS}=5V,$ $R_G = 10\Omega$		15		nS
$t_{D(off)}$	Turn-off Time			80		nS

SOT-523 Package Outline



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.70	0.90	0.028	0.035
A1	0.00	0.10	0.000	0.004
A2	0.70	0.80	0.028	0.031
b1	0.15	0.25	0.006	0.010
b2	0.25	0.35	0.010	0.014
c	0.10	0.20	0.004	0.008
D	1.50	1.70	0.059	0.067
E	0.70	0.90	0.028	0.035
E1	1.45	1.75	0.057	0.069
e	0.50 TYP.		0.020 TYP.	
e1	0.90	1.10	0.035	0.043
L	0.40 REF.		0.016 REF.	
L1	0.10	0.30	0.004	0.012
theta	0°	8°	0°	8°

Typical Soldering Pattern:



NOTES:

1. Above package outline conforms to JEITA EAIJ ED-7500A SC-75A.
2. Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

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