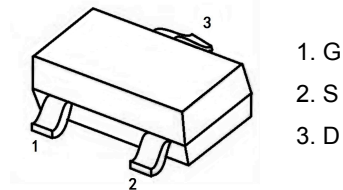


N-Channel Mosfet

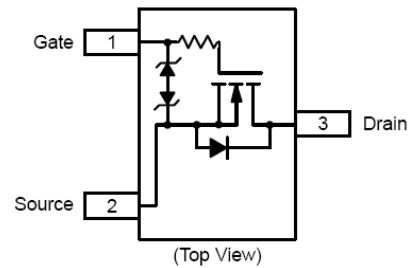
FEATURES

- Power MOSFET: 1.8-V Rated
- Gate-Source ESD Protected: 2000V
- High-side Switching
- Low On-Resistance: 0.7Ω
- Low Threshold: 0.8V (Typ.)
- Fast Switching Speed: 10ns
- S-Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- RoHS Compliant
- Gree En MC
- Matte Tin(Sn) Lead Finish
- Weight: approx. 0.002g

SOT-523



CIRCUIT DIAGRAM



APPLICATIONS

- Drivers: Relays, Solenoids, Lamps, Hammers, displays, Memories
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Cell Phones,agers

MARKING: A

MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	5 secs	Steady State	Units	
V_{DS}	Drain-Source Voltage		20	V	
V_{GS}	Gate-Source Voltage		±6V	V	
I_D	Continuous Drain Current ^e	$T_A=25^\circ\text{C}$	600	500	mA
		$T_A=85^\circ\text{C}$	400	350	
I_{DM}	Pulsed Drain Current ^d		1000	mA	
I_S	Continuous Source Current ^e	275	250	mA	
P_D	Power Dissipation ^e	$T_A=25^\circ\text{C}$	175	150	mW
		$T_A=85^\circ\text{C}$	90	80	
T_{STG}	Storage Temperature Range		-55 to +150	°C	
T_J	Operating Junction Temperature		+150	°C	
ESD	Gate-source ESD Rating (HBM, Method 3015)		2000	V	

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

- d. Pulse width limited by maximum junction temperature.
- e. Surface mounted on FR4 board.

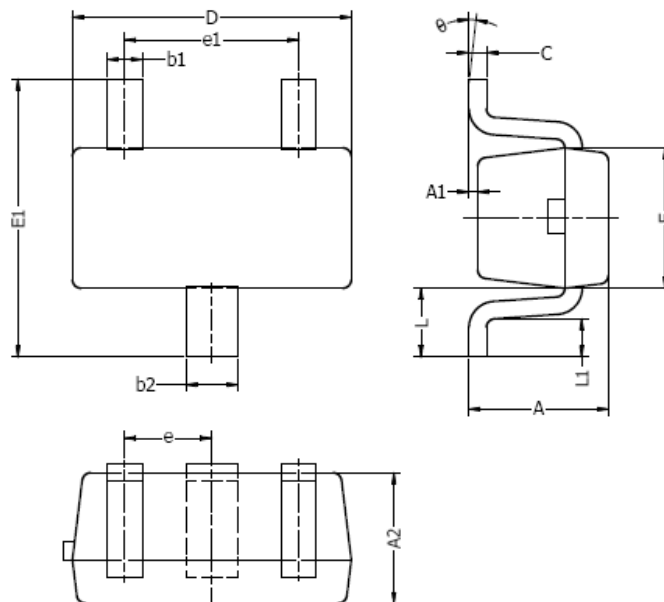
ELECTRICAL CHARACTERISTICS (Ta=25 °C unless otherwise specified)

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
Static						
$V_{th(GS)}$	Gate-Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	0.45		0.9	V
I_{GSS}	Gate-Body Leakage	$V_{DS}=0V, V_{GS}=\pm 4.5V$		± 0.5	± 1.0	μA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=20V, V_{GS}=0V$		0.3	100	nA
$I_{D(ON)}$	On-state Drain Current ^a	$V_{DS}=5V, V_{GS}=4.5V$	700			mA
$R_{DS(on)}$	Drain-Source On-Resistance ^a	$V_{GS}=4.5V, I_D=600mA$		0.41	0.70	Ω
		$V_{GS}=2.5V, I_D=500mA$		0.53	0.85	
		$V_{GS}=1.8V, I_D=350mA$		0.70	1.25	
g_{fs}	Forward Trans Conductance ^a	$V_{DS}=10V, I_D=400mA$		1		ms
V_{SD}	Diode Forward Voltage ^a	$I_S=150mA, V_{GS}=0V$		0.8	1.2	V
Dynamic ^b						
Q_g	Total Gate Charge	$V_{DS}=10V,$ $V_{GS}=4.5V,$ $I_D=250mA$	--	750	--	pC
Q_{gs}	Gate-Source Charge		--	75	--	
Q_{gd}	Gate-Drain Charge		--	225	--	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=10V, R_L=47\Omega,$ $I_D=200mA,$ $V_{GEN}=4.5V R_G=10\Omega$	--	5	--	ns
t_r	Rise Time		--	5	--	
$t_{d(off)}$	Turn-Off Delay Time		--	25	--	
t_f	Fall Time		--	11	--	

Notes:

- Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production testing.

SOT-523 PACKAGE OUTLINE DRAWING



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
θ	0°	8°	0°	8°