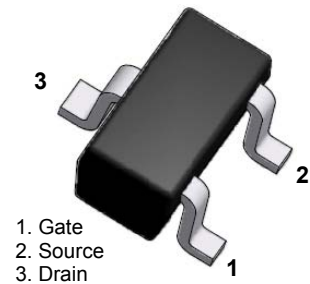


## 150mW SOT-523 SURFACE MOUNT Plastic Package N-Channel MOSFET

### Absolute Maximum Ratings T<sub>A</sub> = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>DS</sub>	Drain-Source Voltage	60	V
V <sub>GS</sub>	Continuous Gate-Source Voltage	±20V	V
I <sub>D</sub>	Continuous Drain Current	115	mA
P <sub>D</sub>	Power Dissipation	150	mW
R <sub>θJA</sub>	Thermal Resistance from Junction to Ambient	833	°C /W
T <sub>STG</sub>	Storage Temperature Range	-55 to +150	°C
T <sub>J</sub>	Operating Junction Temperature	+150	°C

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

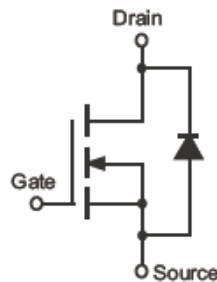


SOT-523

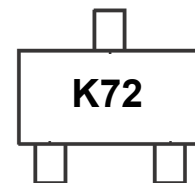
### Specification Features:

- Low On-resistance
- Low Gate Threshold Voltage
- Low Input capacitance
- RoHS Compliant
- Green EMC
- Matte Tin(Sn) Lead Finish
- Weight: approx. 0.002g

### Electrical Symbol:



### Device Marking Code:



## Electrical Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

### Off Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =10uA	60			Volts
I <sub>GSS</sub>	Gate-Body Leakage	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±1	uA
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =60V, V <sub>GS</sub> =0V			100	nA

### On Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
V <sub>th(GS)</sub>	Gate-Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250uA	1			Volts
I <sub>D(ON)</sub>	On-state Drain Current	V <sub>GS</sub> =10V, V <sub>DS</sub> =7V	500			mA
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> =10V, I <sub>D</sub> =500mA			7.5	Ω
		V <sub>GS</sub> =5V, I <sub>D</sub> =50mA			7.5	Ω
g <sub>fs</sub>	Forward Trans Conductance	V <sub>DS</sub> =10V, I <sub>D</sub> =200mA	80		500	ms
V <sub>DS(on)</sub>	Drain-Source On-Voltage	V <sub>GS</sub> =10V, I <sub>D</sub> =500mA			3.75	V
		V <sub>GS</sub> =5V, I <sub>D</sub> =50mA			0.375	V
V <sub>SD</sub>	Diode Forward Voltage	I <sub>S</sub> =250mA, V <sub>GS</sub> =0V			1	V

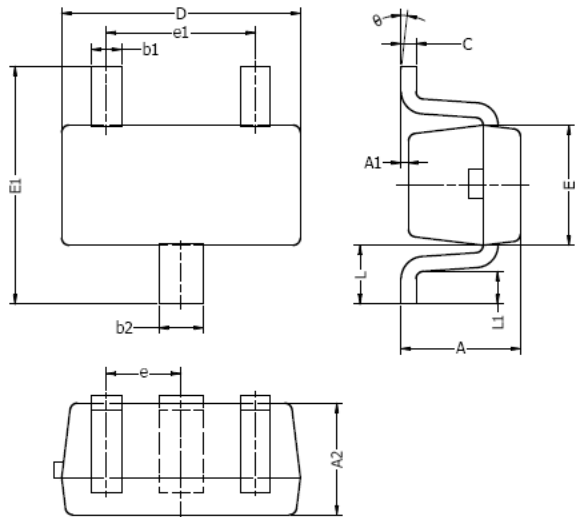
### Dynamic Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> = 25V, V <sub>GS</sub> = 0V, f = 1.0MHz	--	--	50	pF
C <sub>oss</sub>	Output Capacitance		--	--	25	pF
C <sub>rss</sub>	Reverse Transfer Capacitance		--	--	5.0	pF

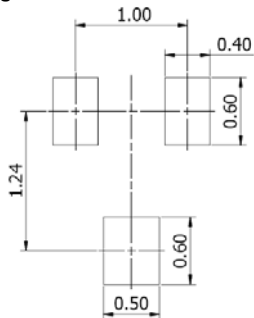
### Switching Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
t <sub>D(on)</sub>	Turn-on Time	V <sub>DD</sub> =10V, R <sub>L</sub> =20Ω, I <sub>D</sub> =500mA, V <sub>GEN</sub> =10V,	--	5.6	--	nS
t <sub>D(off)</sub>	Turn-off Time	R <sub>G</sub> = 10Ω	--	25	--	nS

**SOT-523 Package Outline**



**Typical Soldering Pattern:**



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°

**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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