

Features

- Low Gate Threshold Voltage
- Low Input Capacitance
- Low On-Resistance
- ESD protected Gate HBM 2.5KV
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device ⁽¹⁾
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

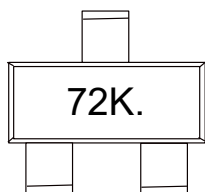
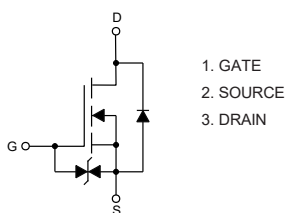
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance: 833°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V _{DS}	60	V	
Gate-Source Voltage	V _{GS}	Continuous	±20	V
		Pulsed	±40	V
Drain-Gate Voltage	R _{GS} ≤ 1.0MΩ	V _{DGR}	60V	V
Drain Current-Continuous	I _D	T _C =25°C	0.300	A
		T _C =100°C	0.240	A
Pulsed Drain Current	I _{DM}	1.5	A	
Power Dissipation ⁽²⁾	P _D	0.30	W	

Note:

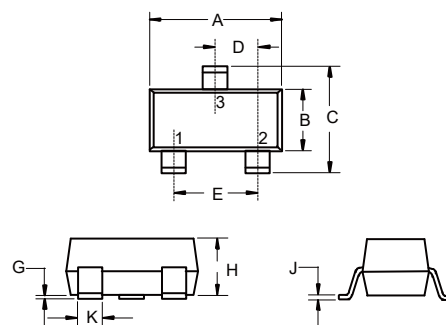
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Valid Provided That Terminals are Kept at Specified Ambient Temperature.

Internal Structure and Marking Code



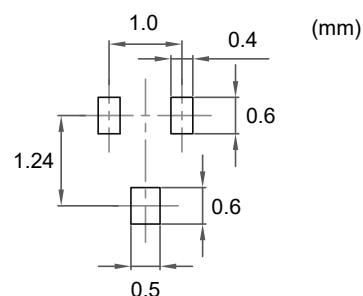
N-Channel MOSFET

SOT-523



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.059	0.067	1.50	1.70	
B	0.030	0.033	0.75	0.85	
C	0.057	0.069	1.45	1.75	
D	0.020		0.50		TYP.
E	0.035	0.043	0.90	1.10	
G	0.000	0.004	0.00	0.10	
H	0.024	0.031	0.60	0.80	
J	0.004	0.008	0.10	0.20	
K	0.006	0.014	0.15	0.35	

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=10\mu A$	60			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			1	μA
		$V_{DS}=60V, V_{GS}=0V, T_C=125^\circ C$			500	μA
Gate-Threshold Voltage ⁽³⁾	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1		2.5	V
On-State Drain Current	$I_{D(on)}$	$V_{DS}=7.5V, V_{GS}=10V$	500	1000		mA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=300mA$		1.9	2.5	Ω
		$V_{GS}=4.5V, I_D=200mA$		2.0	3.0	Ω
Forward Transconductance	g_{fs}	$V_{DS}=10V, I_D=200mA$	80			ms
Diode Forward Current	I_S				0.30	A
Reverse Recovery Time	t_{rr}	$I_S=300mA, di/dt=-100A/ms,$ $V_{DS}=25V, V_{GS}=0V$		30		ns
Reverse Recovery Charge	Q_{rr}			30		nC
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		22	50	pF
Output Capacitance	C_{oss}			11	25	
Reverse Transfer Capacitance	C_{rss}			2	5	
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=4.5V, I_D=250mA$		0.3		nC
Gate-Source Charge	Q_{gs}			0.2		
Gate-Drain Charge	Q_{gd}			0.08		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=30V, V_{GEN}=10V,$ $R_G=25\Omega, R_L=150\Omega, I_D=200mA$		7	20	ns
Turn-Off Delay Time	$t_{d(off)}$			11	20	

 Note: 3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

Curve Characteristics

Fig. 1 - Output Characteristics

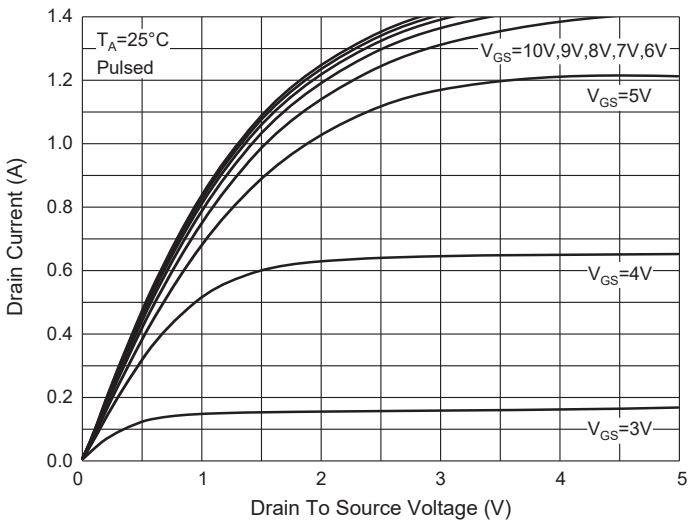


Fig. 2 - Transfer Characteristics

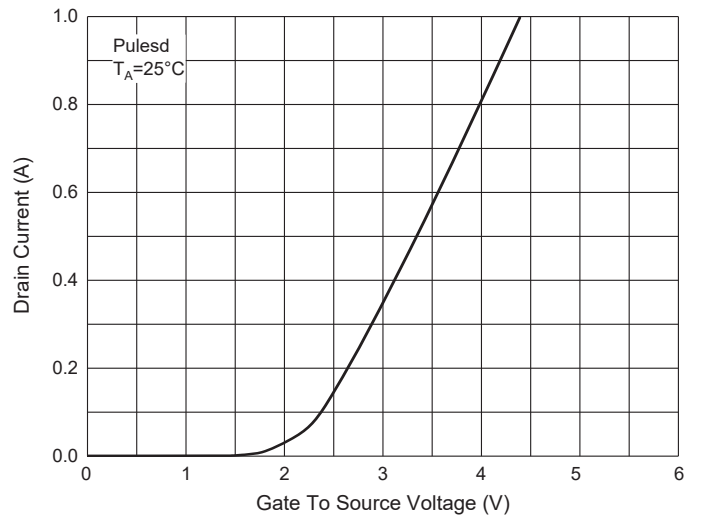


Fig. 3 - $R_{DS(ON)} - I_D$

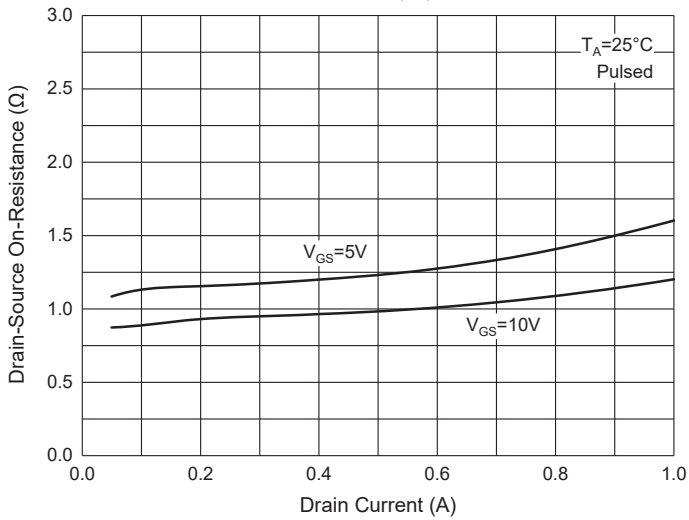


Fig. 3 - $R_{DS(ON)} - V_{GS}$

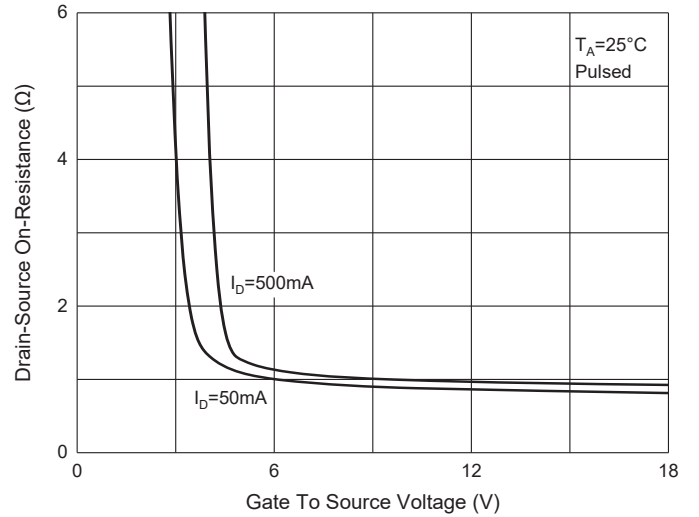
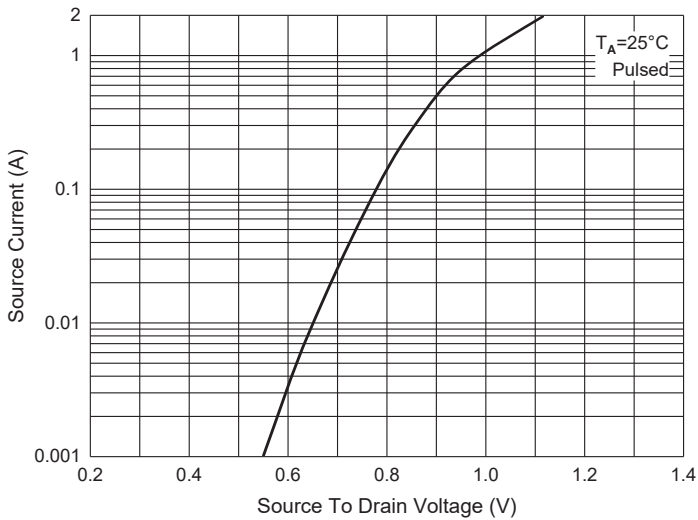


Fig. 5 - $I_S - V_{SD}$



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel

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