

Features

- High Density Cell Design for Low $R_{DS(ON)}$
- Voltage Controlled Small Signal Switch
- 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)

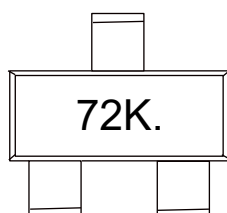
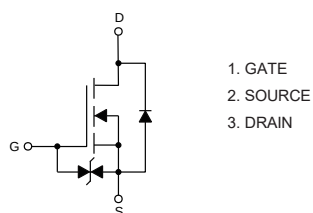
Maximum Ratings

- Operating Junction Temperature Range: -55°C to $+150^{\circ}\text{C}$
- Storage Temperature: -55°C to $+150^{\circ}\text{C}$
- Thermal Resistance: 625°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	0.34	A
Power Dissipation	P_D	0.20	W

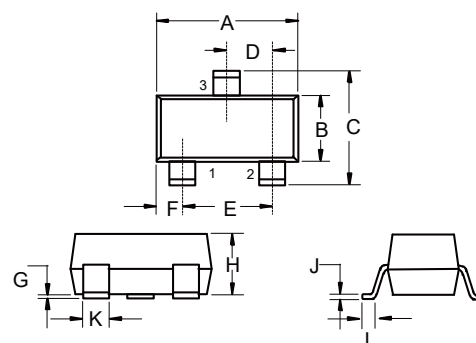
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Internal Structure and Marking Code



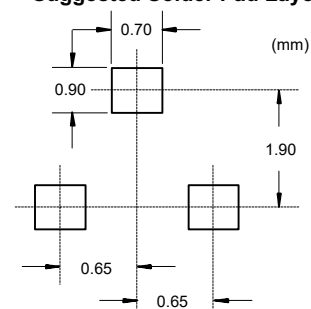
N-Channel MOSFET

SOT-323



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.071	0.087	1.80	2.20	
B	0.045	0.053	1.15	1.35	
C	0.083	0.096	2.10	2.45	
D	0.026		0.65		TYP.
E	0.047	0.055	1.20	1.40	
F	0.012	0.016	0.30	0.40	
G	0.000	0.004	0.00	0.10	
H	0.035	0.044	0.90	1.10	
J	0.002	0.010	0.05	0.25	
K	0.006	0.016	0.15	0.40	
L	0.010	0.018	0.26	0.46	

Suggested Solder Pad Layout



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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	60			V
Gate-Threshold Voltage ⁽²⁾	V _{GS(th)}	V _{DS} =V _{GS} , I _D =1mA	1.0		2.0	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =48V, V _{GS} =0V			1.0	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±10	μA
Drain-Source On-Resistance ⁽²⁾	R _{DS(on)}	V _{GS} =10V, I _D =500mA			5.0	Ω
		V _{GS} =4.5V, I _D =200mA			5.3	
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =300mA			1.5	V
Recovered Charge	Q _r	V _{GS} =0V, I _S =300mA,V _R =25V dI/dt=-100A/μs		30		nC
Dynamic Characteristics						
Input Capacitance ⁽³⁾	C _{iss}	V _{DS} =10V,V _{GS} =0V, f=1MHz			40	pF
Output Capacitance ⁽³⁾	C _{oss}				30	
Reverse Transfer Capacitance ⁽³⁾	C _{rss}				10	
Switching Characteristics						
Turn-On Delay Time ⁽³⁾	t _{d(on)}	V _{DD} =50V,V _{GS} =10V,R _L =250Ω, R _{GS} =50Ω,R _{GEN} =25Ω			10	ns
Turn-Off Delay Time ⁽³⁾	t _{d(off)}				15	
Reverse Recovery Time	t _{rr}	V _{GS} =0V, I _S =300mA,V _R =25V, dI/dt=-100A/μs		30		
Gate-Source Zener Diode						
Gate-Source Breakdown Voltage	BV _{GSO}	I _{GS} =±1mA (Open Drain)	±21.5		±30	V

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

3. These Parameters Have No Way to Verify.

Curve Characteristics

Fig. 1 - Output Characteristics

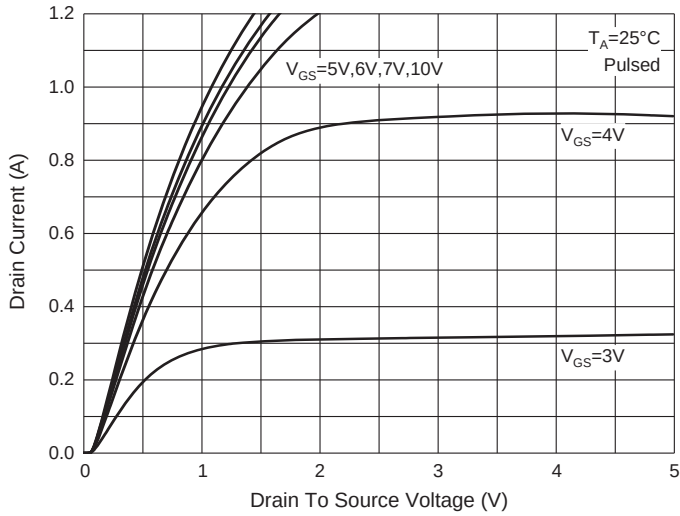


Fig. 2 - Transfer Characteristics

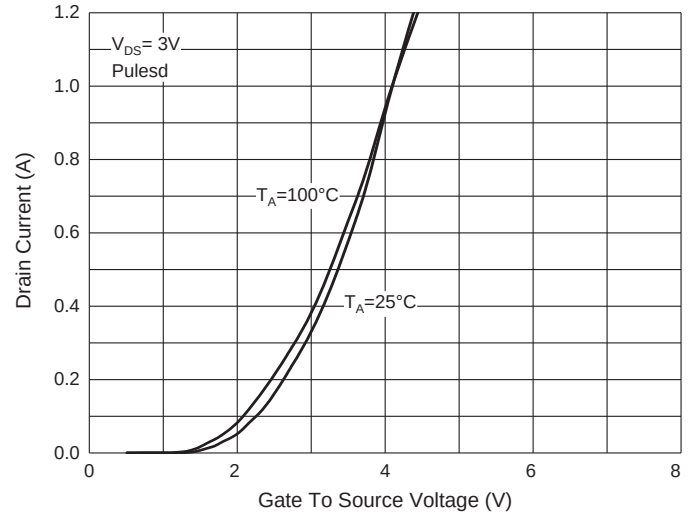


Fig. 3 - $R_{DS(ON)} - I_D$

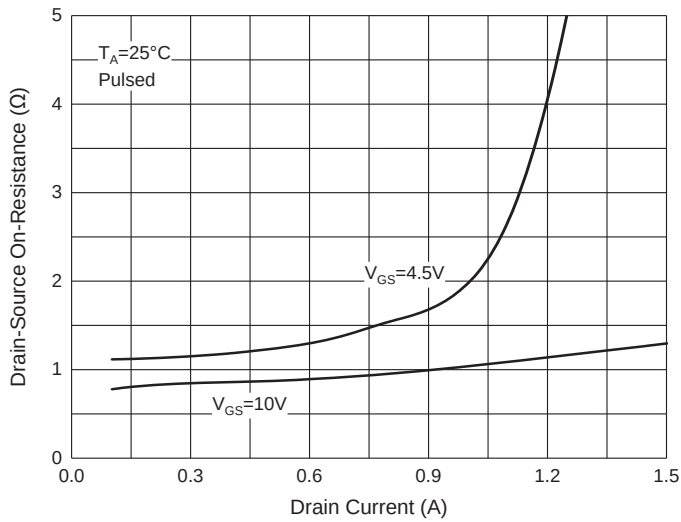


Fig. 4 - $R_{DS(ON)} - V_{GS}$

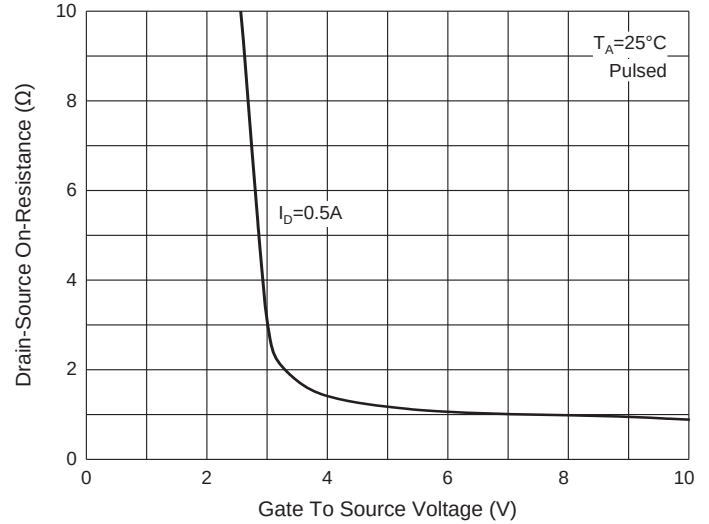


Fig. 5 - $I_S - V_{SD}$

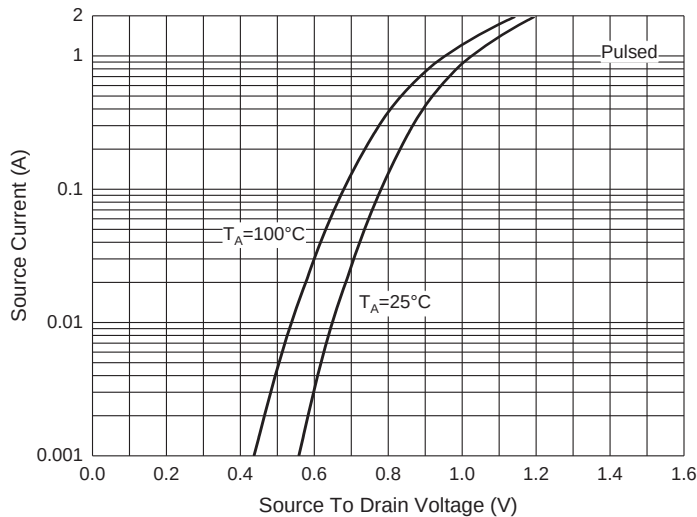
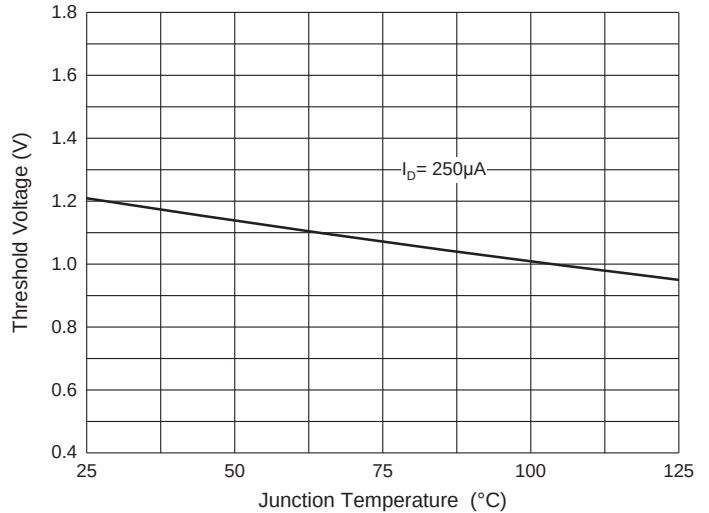


Fig. 6 - Threshold Voltage



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel
Part Number-13P	Tape&Reel: 10Kpcs/Reel

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