

Features

- P-Channel Switch with Low $R_{DS(on)}$
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

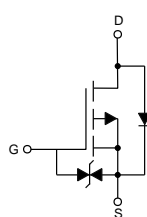
Maximum Ratings

- Operating Junction Temperature Range: -55°C to $+150^{\circ}\text{C}$
- Storage Temperature Range: -55°C to $+150^{\circ}\text{C}$
- Maximum Thermal Resistance: 833°C/W Junction to Ambient

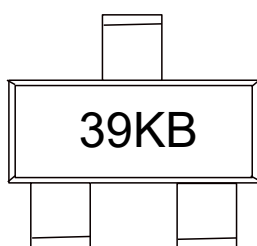
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous	I_D	-0.6	A
Pulsed Drain Current ^(Note 2)	I_{DM}	-3	A
Power Dissipation ^(Note 3)	P_D	0.15	W

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

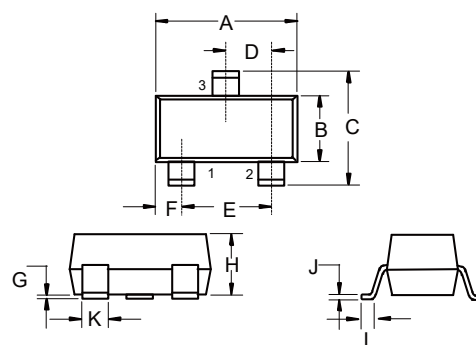


1. GATE
2. SOURCE
3. DRAIN



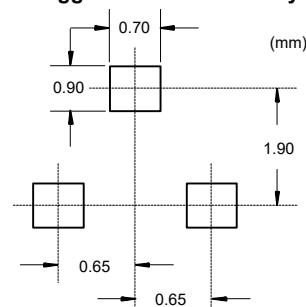
P-Channel MOSFET

SOT-323



DIMENSIONS					
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	-20			V
Gate-Threshold Voltage ^(Note 4)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.35	-0.71	-1.1	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1.0	μA
Gate-body Leakage Current	I _{GSS}	V _{GS} =± 10V, V _{DS} =0V			±10	μA
Drain-Source On-Resistance ^(Note 4)	R _{DS(on)}	V _{GS} =-4.5V, I _D =-500mA		0.62	0.85	Ω
		V _{GS} =-2.5V, I _D =-300mA		0.88	1.2	
		V _{GS} =-1.8V, I _D =-200mA		1.41	2.0	
Forward transconductance	g _{FS}	V _{DS} =-10V, I _D =-500mA	0.8			S
Diode Forward Voltage ^(Note 4)	V _{SD}	V _{GS} =0V, I _S =-500mA			-1.2	V
Dynamic Characteristics ^(Note 5)						
Input Capacitance	C _{iss}	V _{DS} =-16V,V _{GS} =0V, f=1MHz		40		pF
Output Capacitance	C _{oss}			16		
Reverse Transfer Capacitance	C _{rss}			11		
Total Gate Charge	Q _g	V _{GS} =-4.5V,V _{DS} =-10V,I _D =-1A		860		pC
Gate-Source Charge	Q _{gs}			320		
Gate-Drain Charge	Q _{gd}			200		
Switching Characteristics ^(Note 5)						
Turn-on Delay Time	t _{d(on)}	V _{DS} =-10V,V _{GS} =-4.5V,I _D =-500mA, R _G =10Ω		3.8		ns
Turn-off Delay Time	t _{d(off)}			9.4		
Rise Time	t _r			19		
Fall Time	t _f			23		

Notes :

- Repetitive Rating : Pulse Width Limited by Junction Temperature.
- This Test is Performed With No Heat Sink at Ta=25°C.
- Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$.
- Guaranteed by Design, Not Subject to Production Testing.

Curve Characteristics

Fig. 1 - Typical Output Characteristics

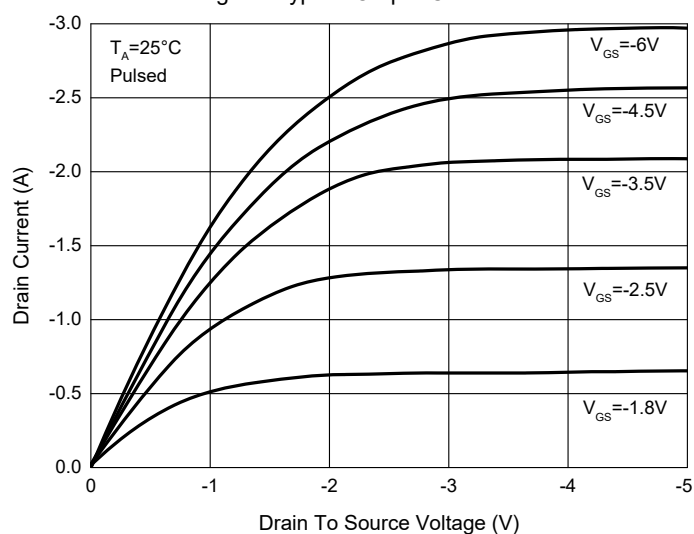


Fig. 2 - Transfer Characteristics

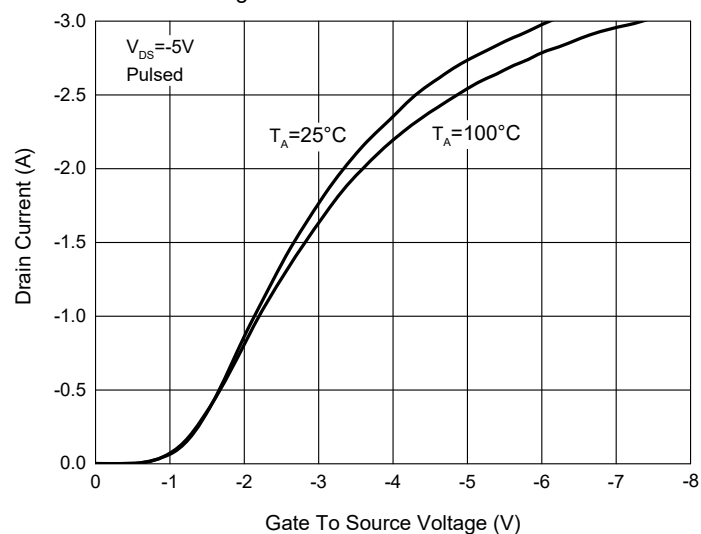


Fig. 3 - $R_{DS(ON)} - I_D$

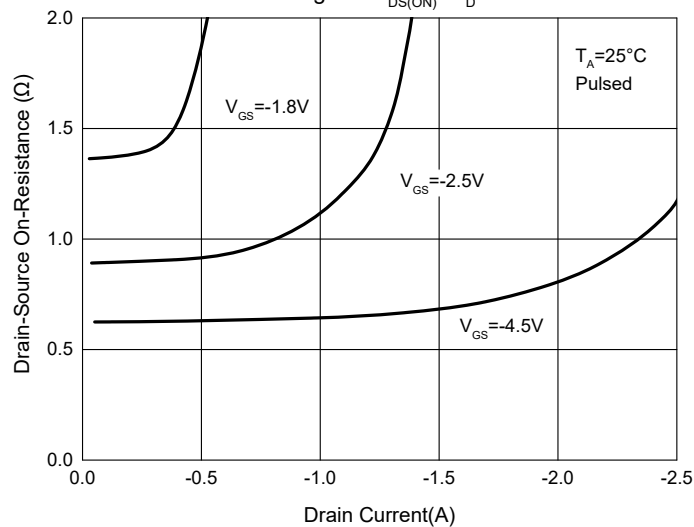


Fig. 4 - $R_{DS(ON)} - V_{GS}$

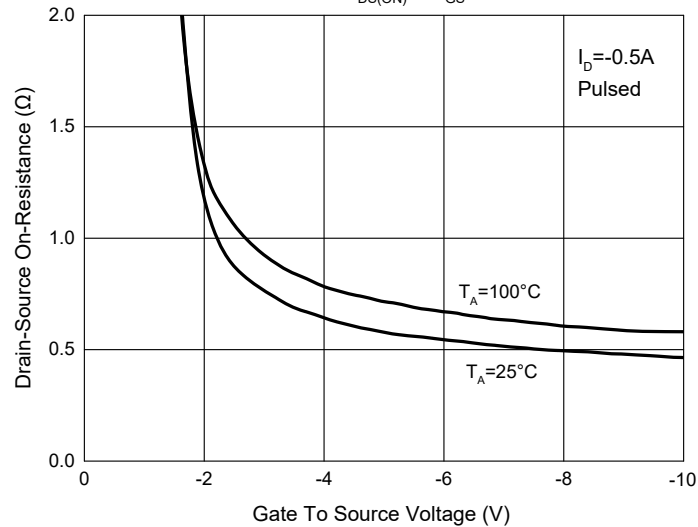


Fig. 5 - $I_S - V_{SD}$

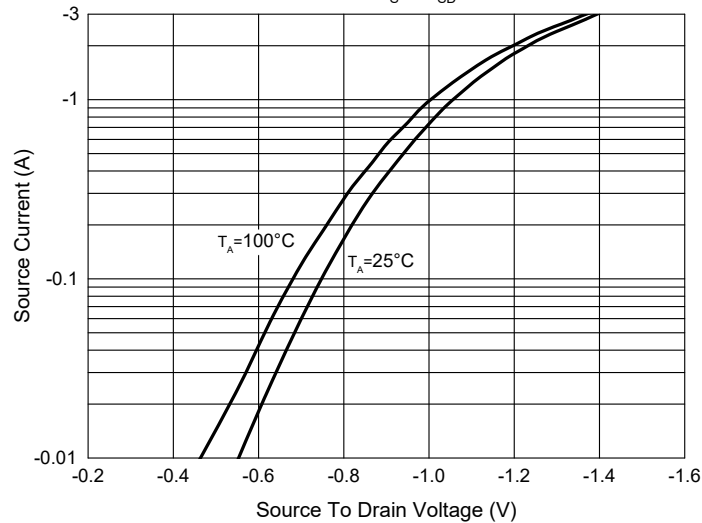
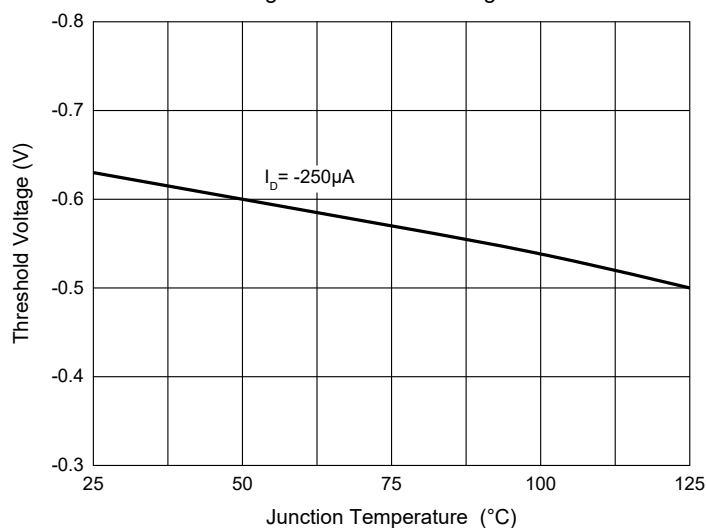


Fig. 6 - Threshold Voltage



Curve Characteristics

Fig. 7 - Capacitance Characteristics

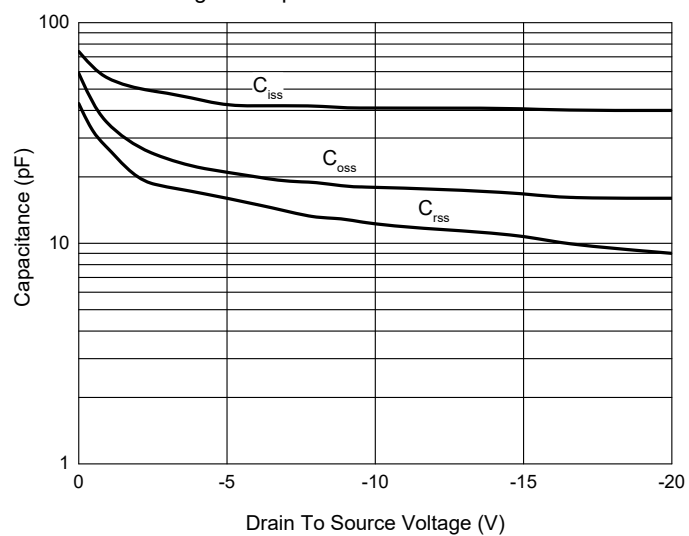
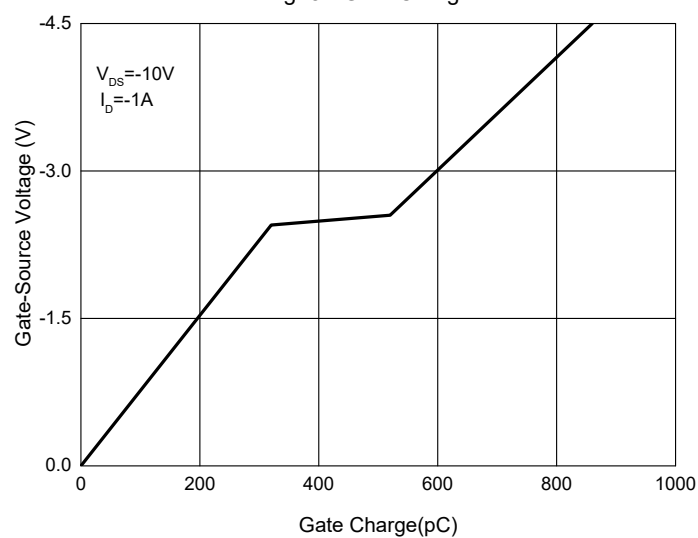


Fig. 8 - Gate Charge



Ordering Information

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

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