

Features

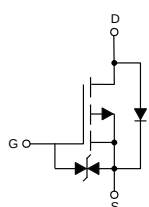
- Operated at Low Logic Level Gate Drive
- P-Channel Switch with Low $R_{DS(on)}$
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering 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	-0.66	A
Pulsed Drain Current	I_{DM}	-1.2	A
Power Dissipation	P_D	0.15	W

Internal Structure

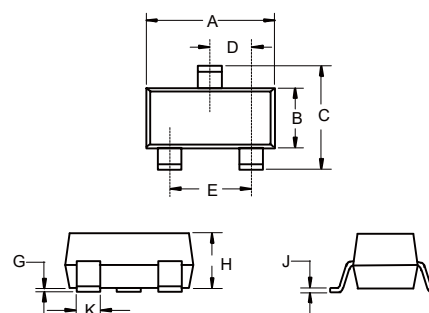


1. GATE
2. SOURCE
3. DRAIN

Marking: 39K

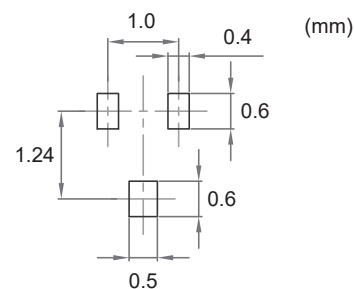
P-Channel MOSFET

SOT-523



DIMENSIONS					
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 (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	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.35		-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			±20	μA
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-1000mA			0.52	Ω
		V _{GS} =-2.5V, I _D =-800mA			0.70	
		V _{GS} =-1.8V, I _D =-500mA		0.95		
Forward transconductance	g _{FS}	V _{DS} =-10V, I _D =-540mA		1.2		S
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-500mA			-1.2	V
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-16V,V _{GS} =0V, f=1MHz		113	170	pF
Output Capacitance	C _{oss}			15	25	
Reverse Transfer Capacitance	C _{rss}			9	15	
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DS} =-10V,V _{GS} =-4.5V,I _D =-200mA, R _{GEN} =10Ω		9.0		ns
Turn-off Delay Time	t _{d(off)}			32.7		
Rise Time	t _r			5.8		
Fall Time	t _f			20.3		

Curve Characteristics

Fig. 1 - Output Characteristics

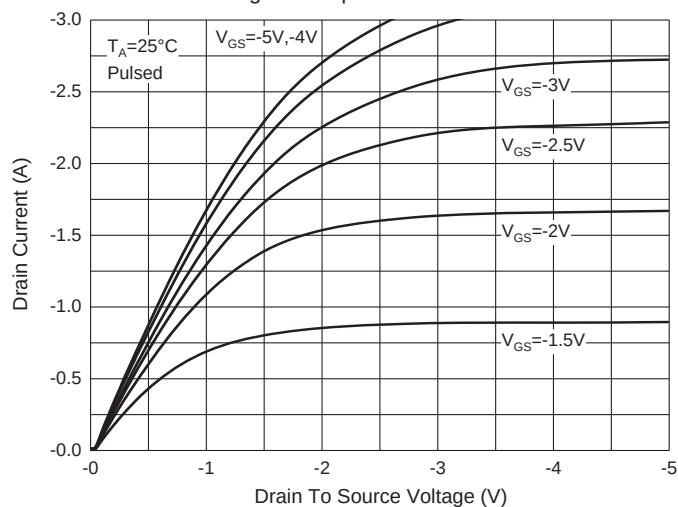


Fig. 2 - Transfer Characteristics

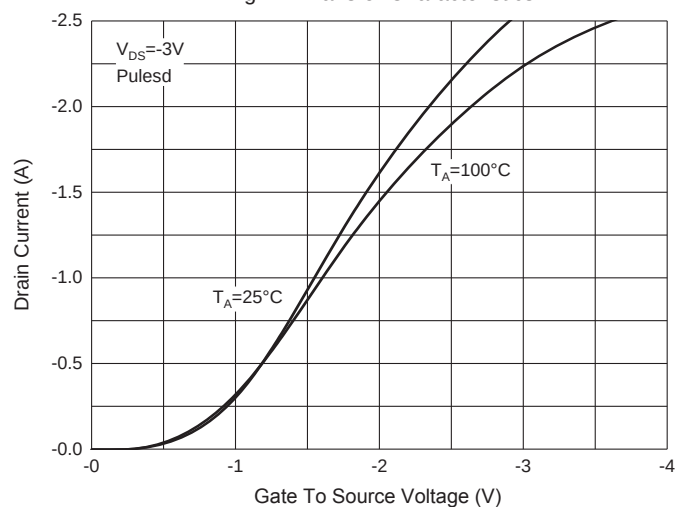


Fig. 3 - $R_{DS(ON)} - I_D$

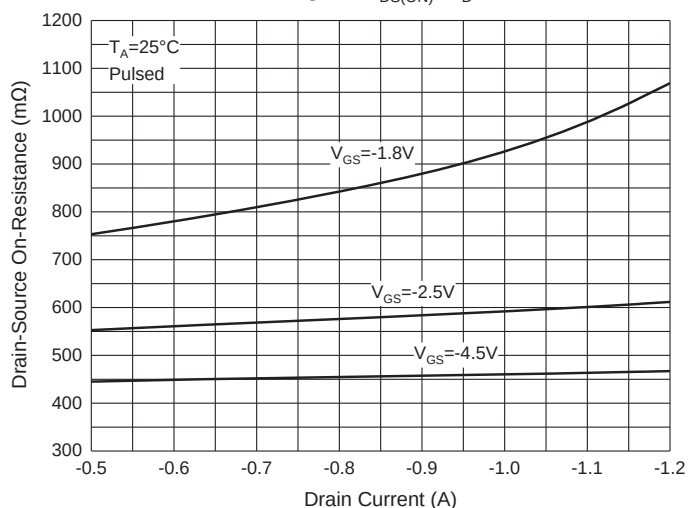


Fig. 4 - $R_{DS(ON)} - V_{GS}$

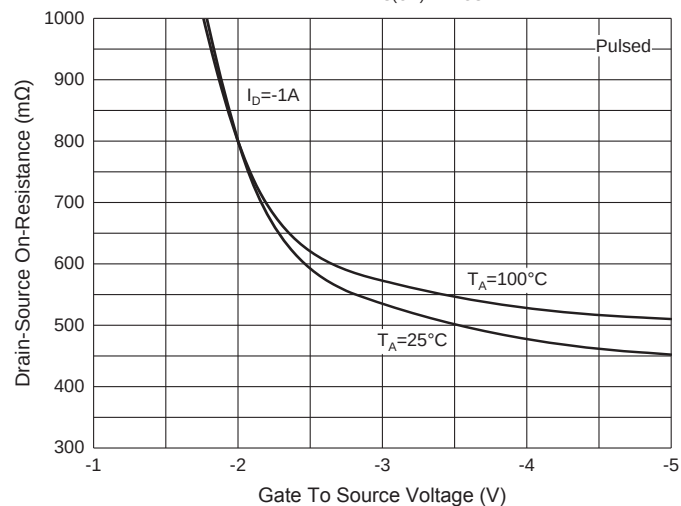


Fig. 5 - $I_S - V_{SD}$

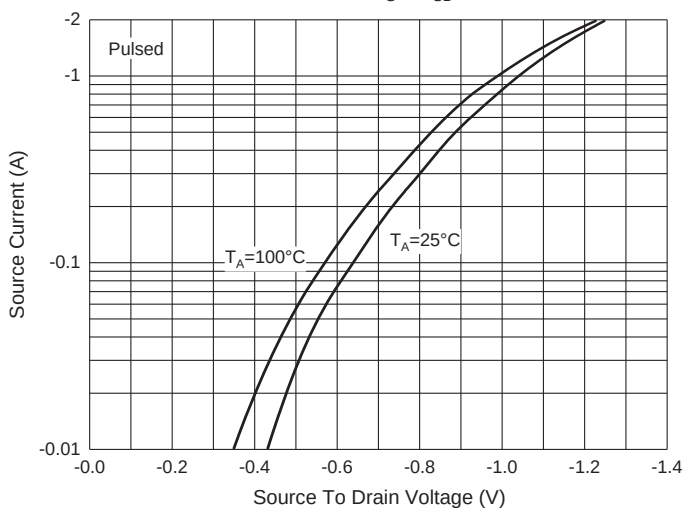
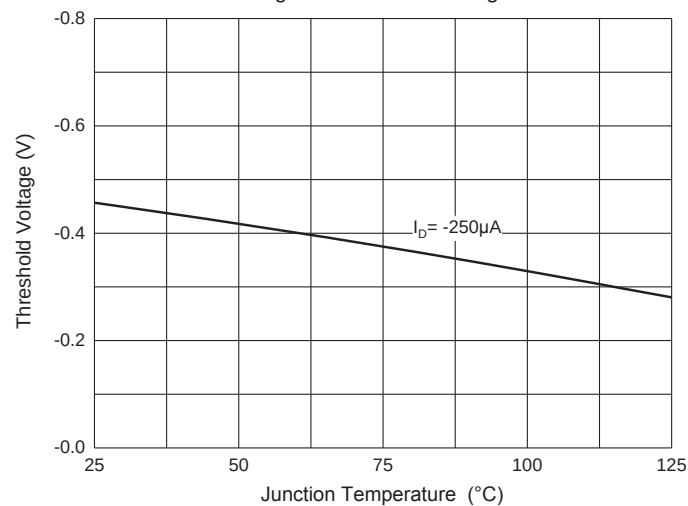


Fig. 6 - Threshold Voltage



Ordering Information

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

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

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