

Features

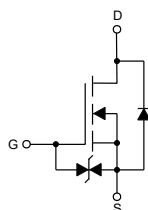
- High Density Cell Design for Low $R_{DS(ON)}$
- Voltage Controlled Small Signal Switch
- ESD Protected up to 2KV (HBM)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

- Operating Junction Temperature Range: -55°C to $+150^{\circ}\text{C}$
- Storage Temperature: -55°C to $+150^{\circ}\text{C}$
- Thermal Resistance: 357°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	0.35	W

Internal Structure

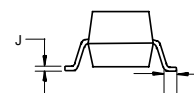
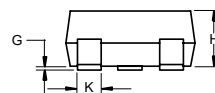
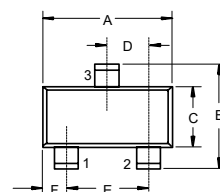


1. GATE
2. SOURCE
3. DRAIN

Marking: 72K.

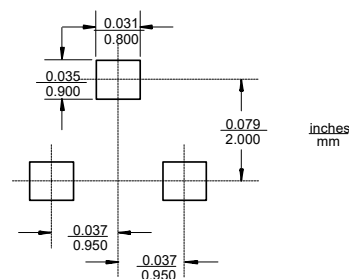
N-Channel MOSFET

SOT-23



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

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 ⁽¹⁾	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	1.4	2.5	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
		V _{GS} =±10V, V _{DS} =0V			±200	nA
		V _{GS} =±5V, V _{DS} =0V			±100	nA
Drain-Source On-Resistance ⁽¹⁾	R _{DS(on)}	V _{GS} =10V, I _D =500mA			5.0	Ω
		V _{GS} =4.5V, I _D =200mA			5.3	
Recovered Charge	Q _r	V _{GS} =0V, I _S =300mA,V _R =25V dI/dt=-100A/μs		30		nC
Dynamic Characteristics						
Input Capacitance ⁽²⁾	C _{iss}	V _{DS} =25V,V _{GS} =0V, f=1MHz		35		pF
Output Capacitance ⁽²⁾	C _{oss}			13		
Reverse Transfer Capacitance ⁽²⁾	C _{rss}			8		
Switching Characteristics						
Turn-on Delay Time ⁽²⁾	t _{d(on)}	V _{DD} =25V,V _{GS} =10V,R _L =250Ω, R _{GS} =50Ω,R _{GEN} =25Ω			10	ns
Turn-off Delay Time ⁽²⁾	t _{d(off)}				15	
Reverse Recovery Time	t _{rr}	V _{GS} =0V, I _S =300mA,V _R =25V, dI/dt=-100A/μs		30		
Source-Drain Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =200mA		0.82	1.3	V
Gate-Source Zener Diode						
Gate-Source Breakdown Voltage	BV _{GSO}	I _{GS} =±1mA,(Open Drain)	±21.5		±30	V

Note: 1. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

2. These Parameters Have No Way to Verify.

Curve Characteristics

Fig. 1 - Output Characteristics

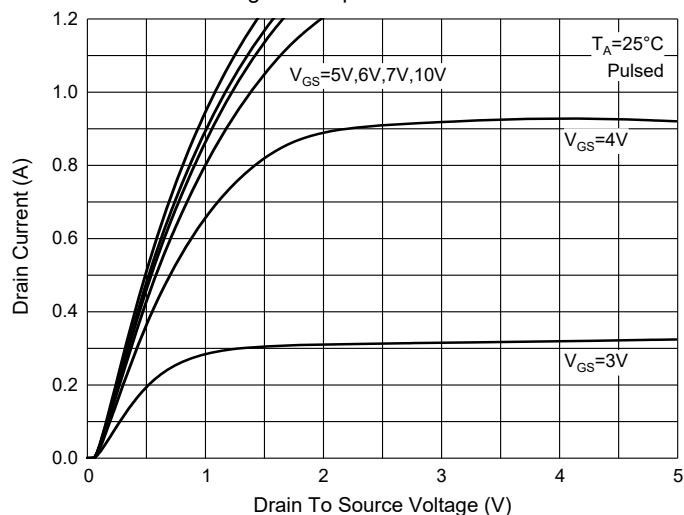


Fig. 2 - Transfer Characteristics

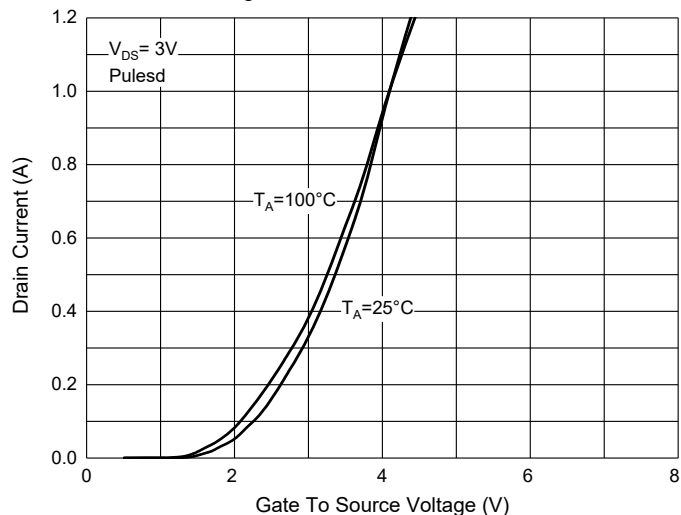


Fig. 3 - $R_{DS(ON)} - I_D$

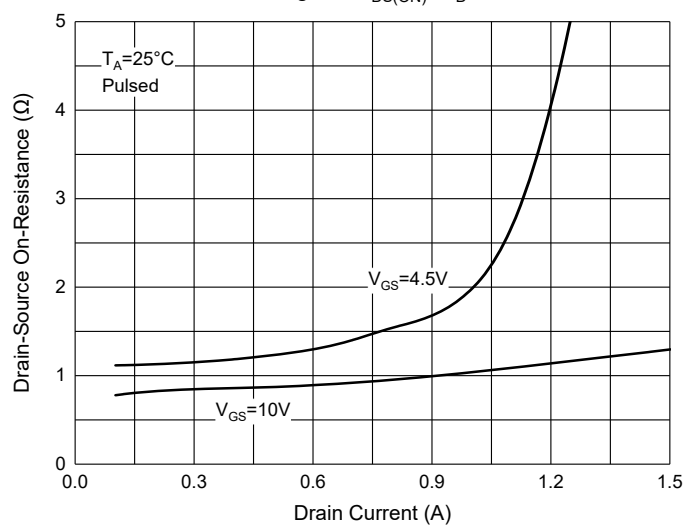


Fig. 4 - $R_{DS(ON)} - V_{GS}$

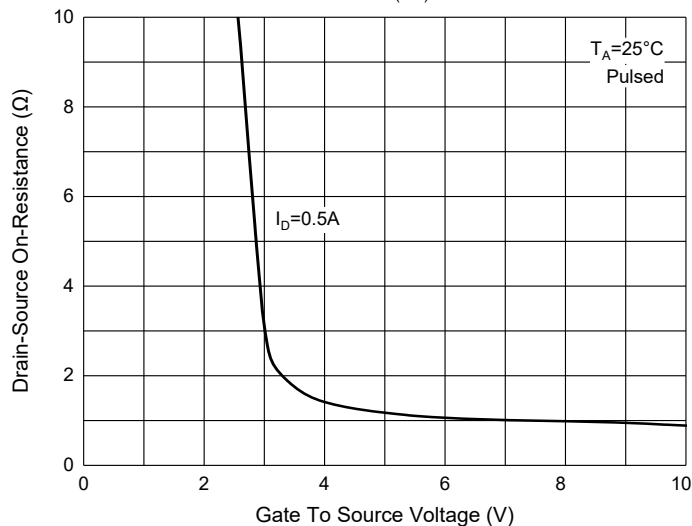


Fig. 5 - $I_S - V_{SD}$

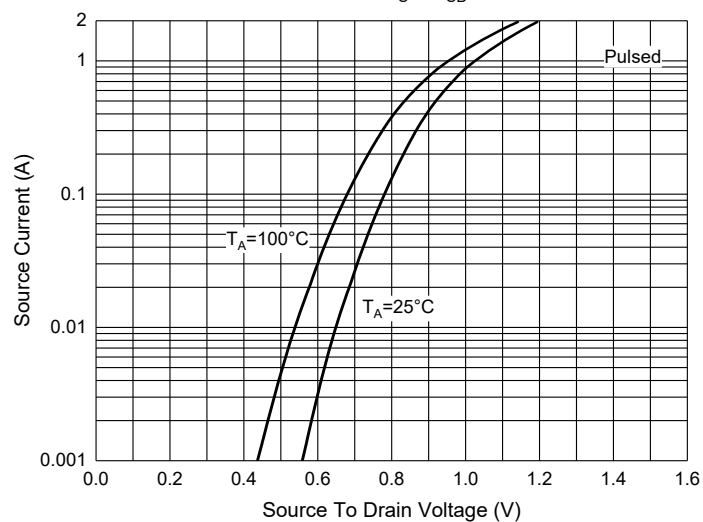
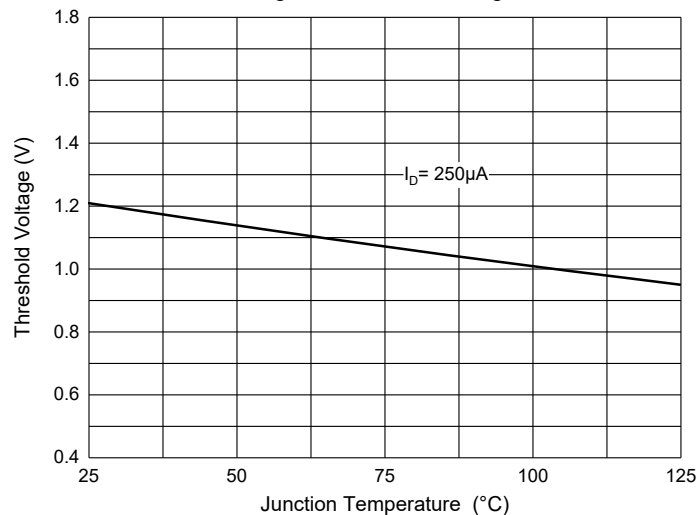
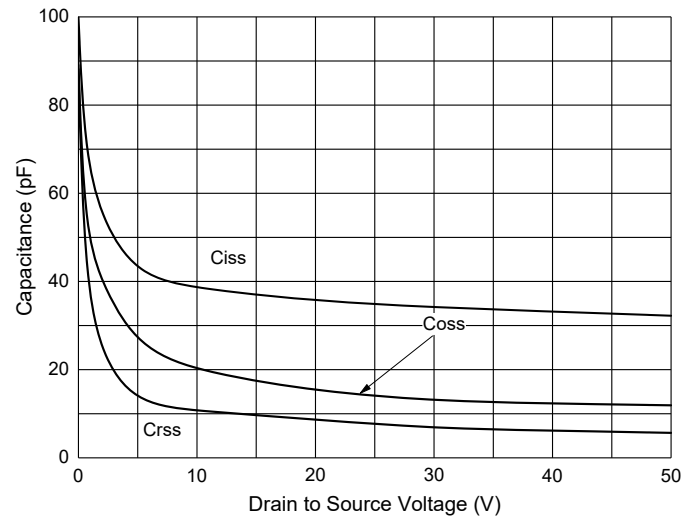


Fig. 6 - Threshold Voltage



Curve Characteristics

Fig. 7 - Capacitance Characteristics



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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