

Features

- Trench Power MV MOSFET Technology
- Voltage Controlled Small Signal Switch
- Low Input Capacitance
- Fast Switching Speed
- Low Input / Output Leakage
- ESD Protected up to 2KV (HBM)
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

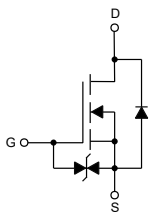
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 357°C/W Junction to Ambient⁽²⁾

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	340	mA
Pulsed Drain Current ⁽³⁾	I_{DM}	1.5	A
Total Power Dissipation	P_D	350	mW

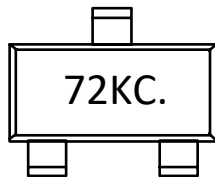
Note:

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.
3. Pulse Test: Pulse Width ≤ 300us, Duty cycle ≤ 2%.

Internal Structure and Marking Code

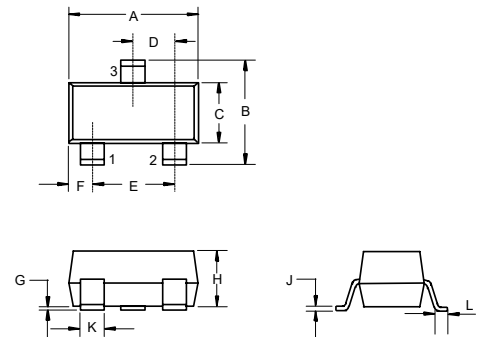


1. GATE
2. SOURCE
3. DRAIN



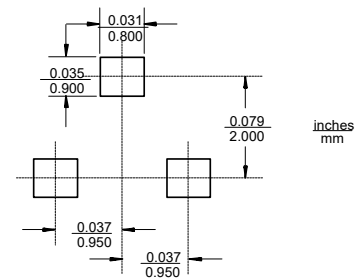
N-CHANNEL MOSFET

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 @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	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
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.5	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=300mA$		1.7	2.2	Ω
		$V_{GS}=4.5V, I_D=200mA$		2	3	Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				340	mA
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=300mA$			1.2	V
Reverse Recovery Time	t_{rr}	$I_S=0.3A, di/dt=100A/\mu s$		11.5		ns
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=30V, V_{GS}=0V, f=1MHz$		27		pF
Output Capacitance	C_{oss}			3		
Reverse Transfer Capacitance	C_{rss}			2		
Total Gate Charge	Q_g	$V_{DS}=30V, V_{GS}=10V, I_D=0.3A$		1.7		nC
Gate-Source Charge	Q_{gs}			0.4		
Gate-Drain Charge	Q_{gd}			0.45		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=50V, V_{GS}=10V, R_G=50\Omega, I_D=0.2A$		6.4		ns
Turn-On Rise Time	t_r			19.2		
Turn-Off Delay Time	$t_{d(off)}$			19.4		
Turn-Off Fall Time	t_f			84		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

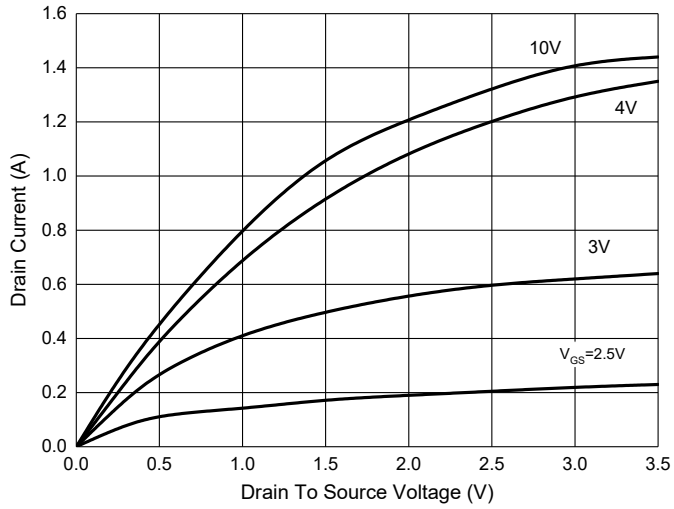


Fig. 2 - Transfer Characteristics

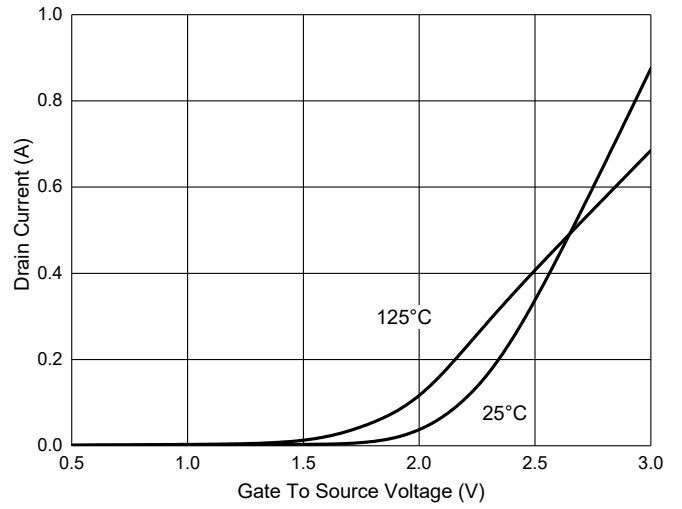


Fig. 3 - $R_{DS(ON)} - I_D$

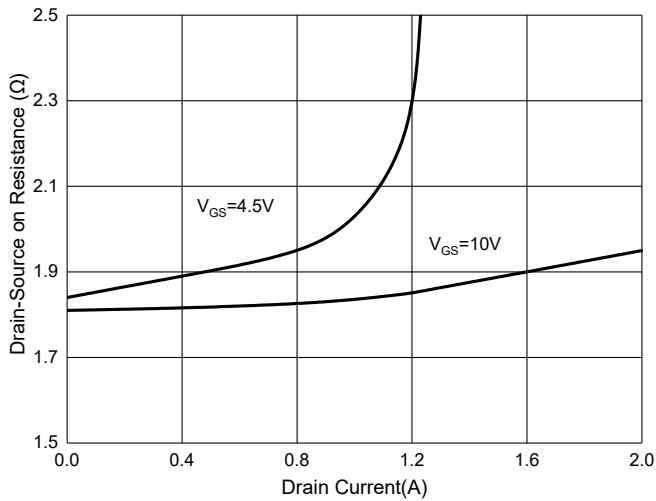


Fig. 4 - Normalized On Resistance Characteristics

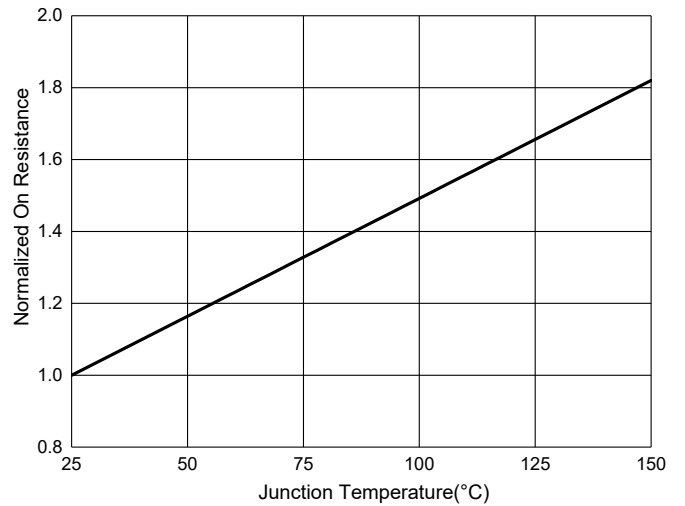


Fig. 5 - Capacitance Characteristics

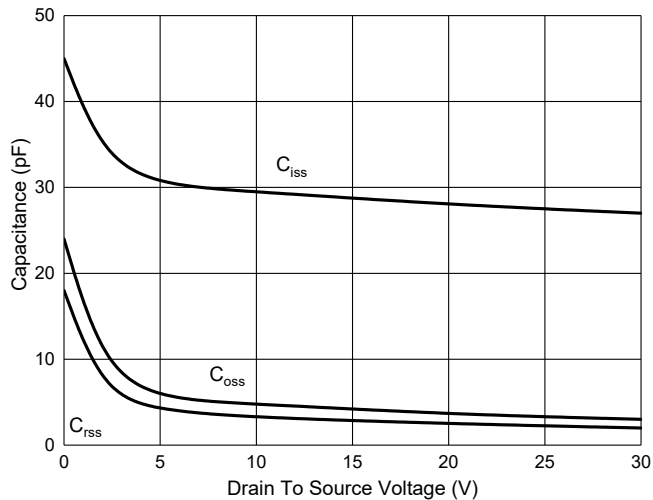
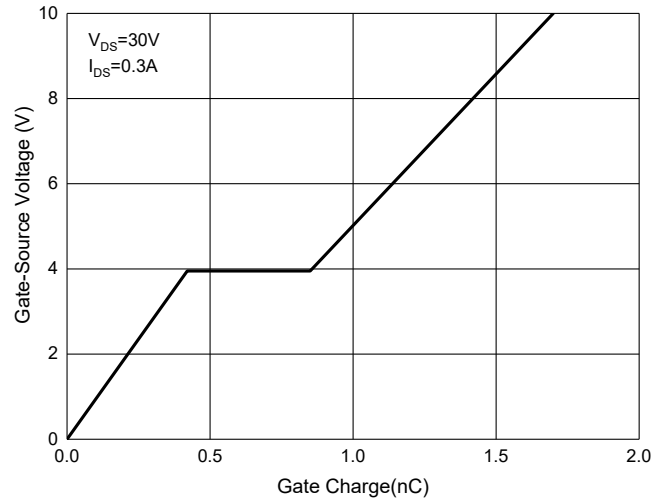
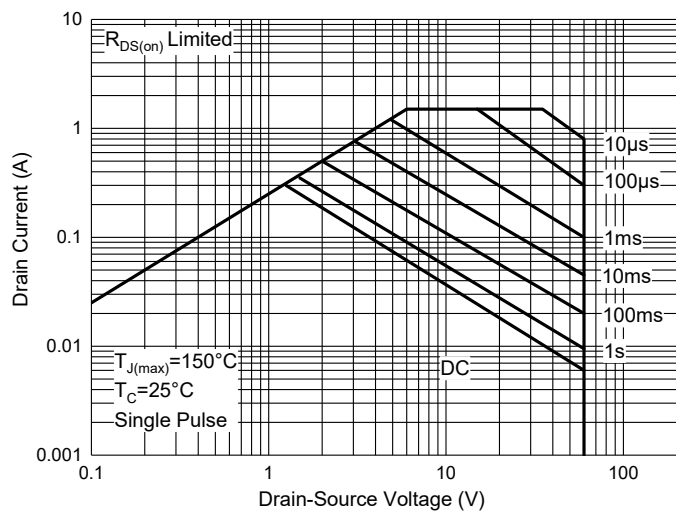


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Safe Operation Area



Ordering Information

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

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