

**Features**

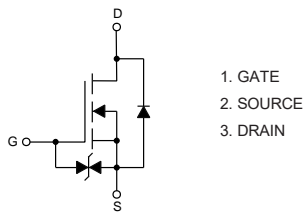
- ESD Protected up to 2KV (HBM)
- High Dense Cell Design For Extremely Low RDS(ON)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

**Maximum Ratings**

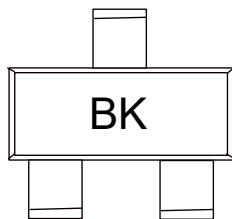
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 500°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	50	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	0.37	A
Pulsed Drain Current	$I_{DM}$	1.48	A
Total Power Dissipation	$T_A=25^\circ\text{C}$	$P_D$	0.25 W

**Internal Structure and Marking Code**

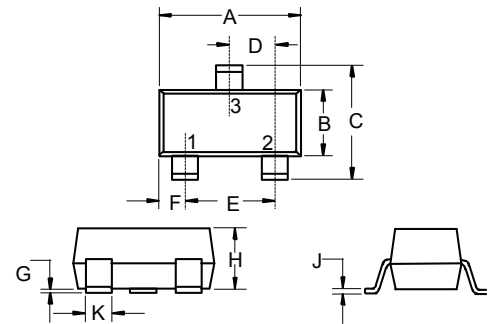


- 1. GATE
- 2. SOURCE
- 3. DRAIN



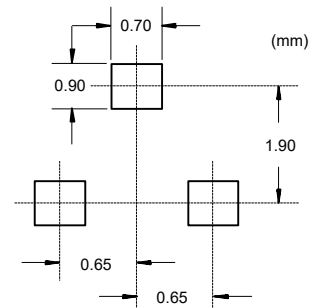
**N-CHANNEL  
MOSFET**

**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	

**Suggested Solder Pad Layout**



**Electrical Characteristics @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	50			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 10$	$\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=50V, V_{GS}=0V$			1	$\mu A$
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5		1.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=0.3A$		1	1.5	$\Omega$
		$V_{GS}=4.5V, I_D=0.2A$		1.1	2.3	
		$V_{GS}=2.5V, I_D=0.1A$		1.6	4.1	
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=0.3A$			1.4	V
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=30V, V_{GS}=0V, f=1MHz$		58		$\mu F$
Output Capacitance	$C_{oss}$			16		
Reverse Transfer Capacitance	$C_{rss}$			9.4		
Total Gate Charge	$Q_g$	$V_{DS}=30V, V_{GS}=10V, I_D=0.3A$		1.5		nC
Gate-Source Charge	$Q_{gs}$			0.3		
Gate-Drain Charge	$Q_{gd}$			0.2		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=30V, V_{GEN}=10V, R_G=3.9\Omega, R_L=100\Omega, I_{DS}=0.3A$		2.5		ns
Turn-On Rise Time	$t_r$			2		
Turn-Off Delay Time	$t_{d(off)}$			9.2		
Turn-Off Fall Time	$t_f$			7.7		

**Curve Characteristics**

Fig. 1 - Typical Output Characteristics

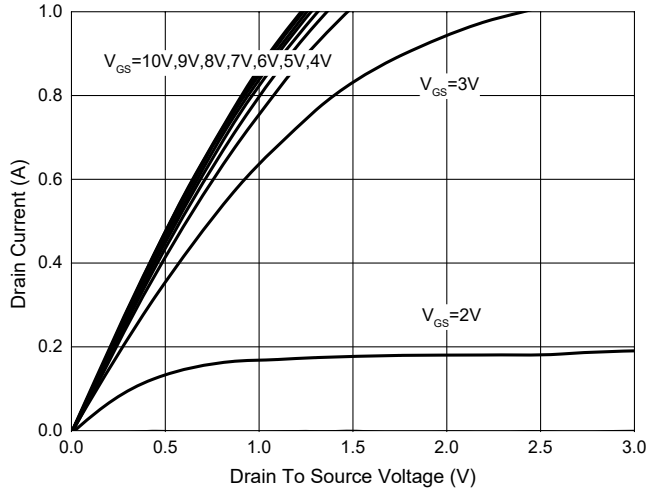


Fig. 2 -  $R_{DS(ON)} - I_D$

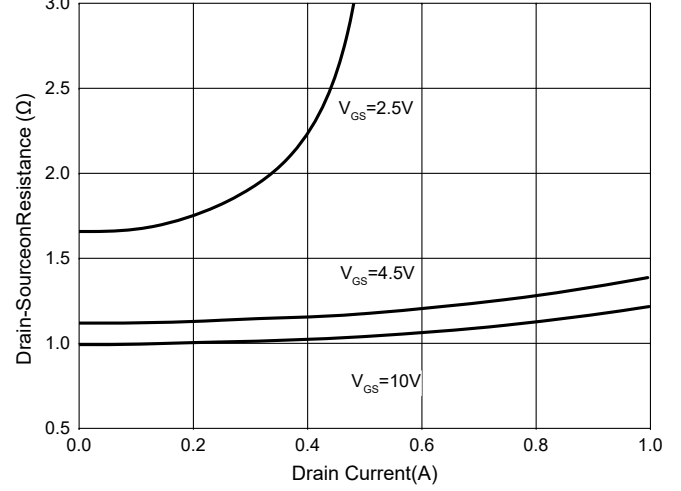


Fig. 3 - Normalized On Resistance Characteristics

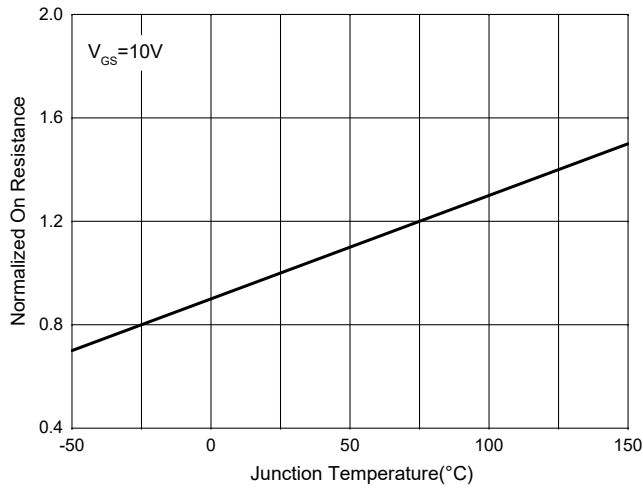


Fig. 4 -  $I_S - V_{SD}$

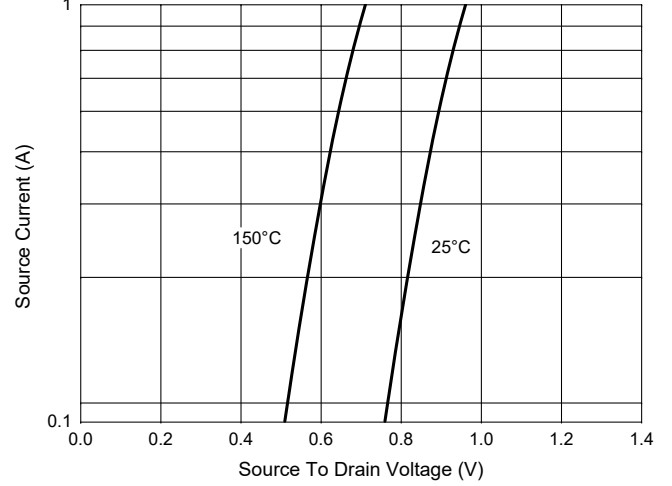


Fig. 5 - Capacitance Characteristics

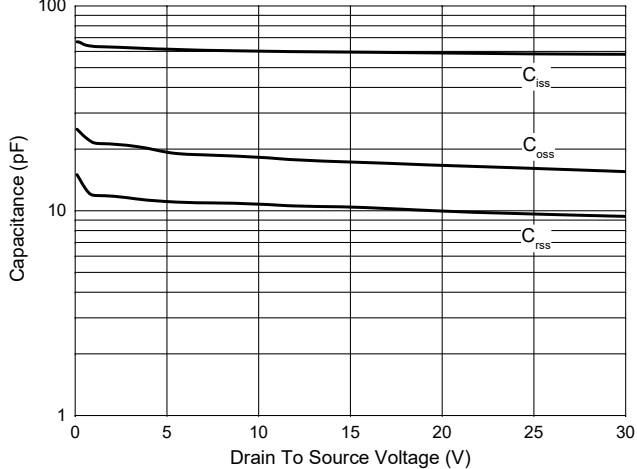
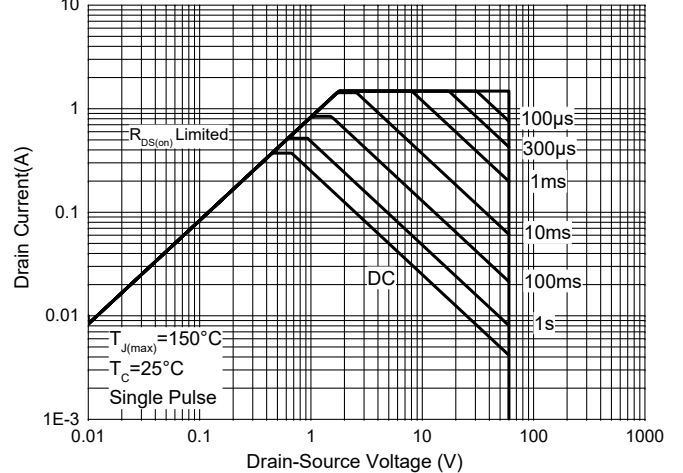
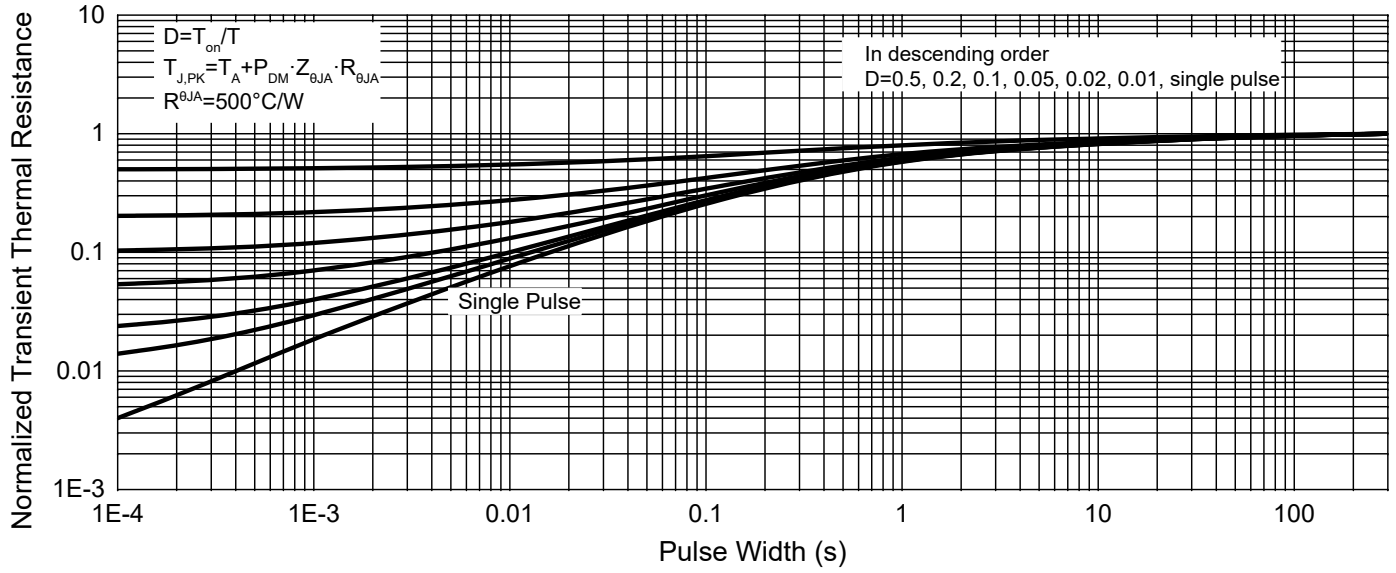


Fig. 6 - Safe Operation Area



**Curve Characteristics**

**Fig. 7 - Normalized Transient Thermal Impedance**



## Ordering Information

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

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