

Features

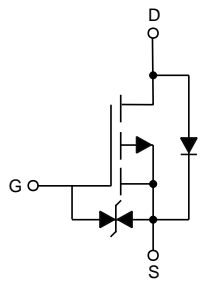
- Energy Efficient
- ESD Protected up to 2KV (HBM)
- Low Threshold Voltage
- High Speed Switching
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 556°C/W Junction to Ambient^(Note3)

Parameter	Symbol	Rating	Unit
Drain -source Voltage	V _{DS}	-60	V
Gate -Source Voltage	V _{GS}	±20	V
Drain Current-Continuous	I _D	-0.13	A
Plused Drain Current @ tp<100µs ^(Note2)	I _{DM}	-0.52	A
Power Dissipation	P _D	0.225	W

Internal Structure

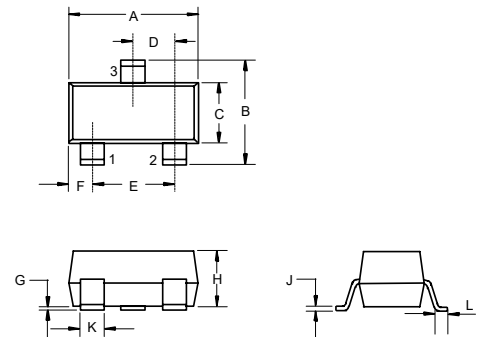


- 1. GATE
- 2. SOURCE
- 3. DRAIN

Marking: B84K

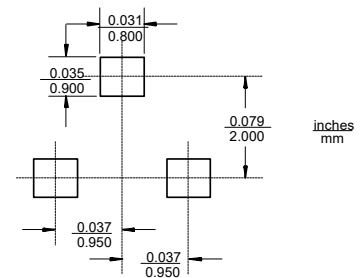
P-Channel MOSFET

SOT-23



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-60			V
Gate-Threshold Voltage ^(Note 4)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.8	-1.5	-2.5	V
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 10	μA
Drain Leakage Current	I_{DSS}	$V_{DS}=-48V, V_{GS}=0V$			-1	μA
Drain-Source On-Resistance ^(Note 4)	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-0.5A$		2.2	6.0	Ω
		$V_{GS}=-4.5V, I_D=-0.2A$		2.5	7.0	
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-0.5A$			-1.3	V
Dynamic Characteristics^(Note 4)						
Input Capacitance	C_{iss}	$V_{DS}=-5V, V_{GS}=0V, f=1MHz$		30		pF
Output Capacitance	C_{oss}			10		
Reverse Transfer Capacitance	C_{rss}			5		
Switching Characteristics^(Note 5)						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-15V, I_D=-2.5A, R_L=50\Omega$		2.5		ns
Turn-On Rise Time	t_r			1.0		
Turn-Off Delay Time	$t_{d(off)}$			16		
Turn-Off Fall Time	t_f			8.0		

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. Repetitive rating: Pulse width limited by junction temperature.

3. Surface mounted on FR4 board, $t_s \leq 10s$.

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

5. Guaranteed by design, not subject to production.

Curve Characteristics

Fig. 1 - Output Characteristics

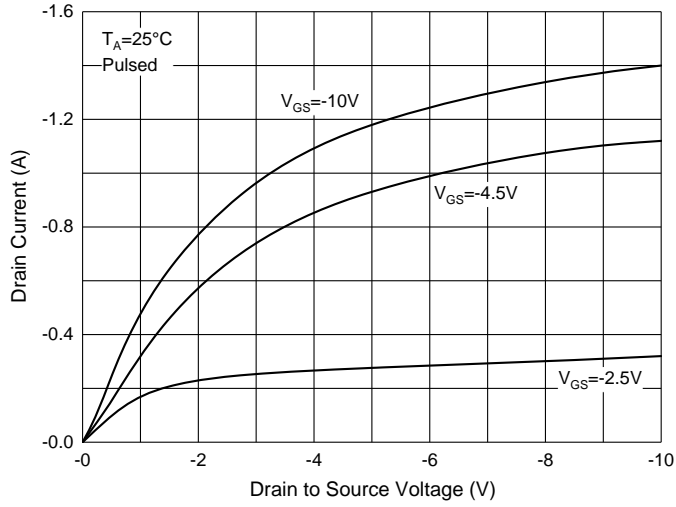


Fig. 2 - Transfer Characteristics

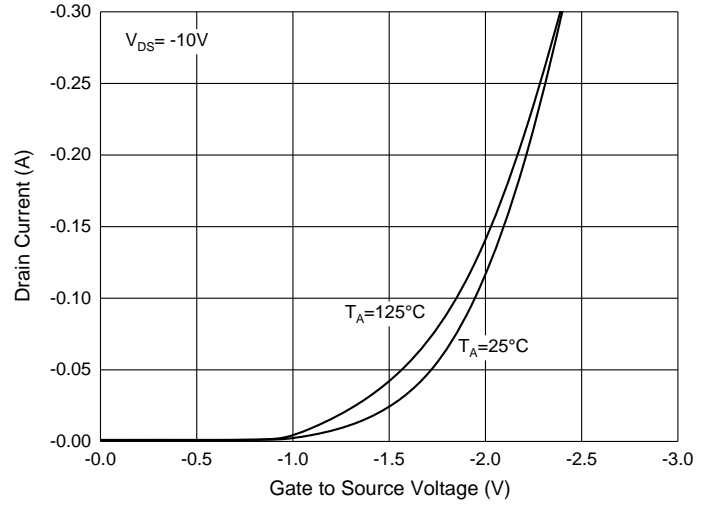


Fig. 3 - $R_{DS(ON)} - I_D$

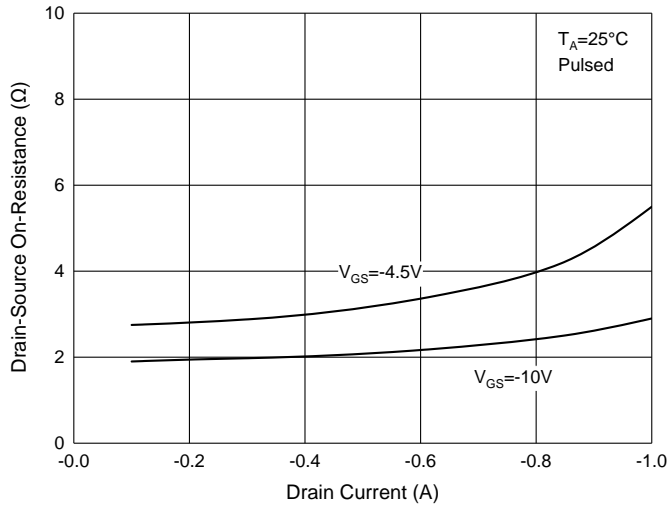


Fig. 4 - $R_{DS(ON)} - V_{GS}$

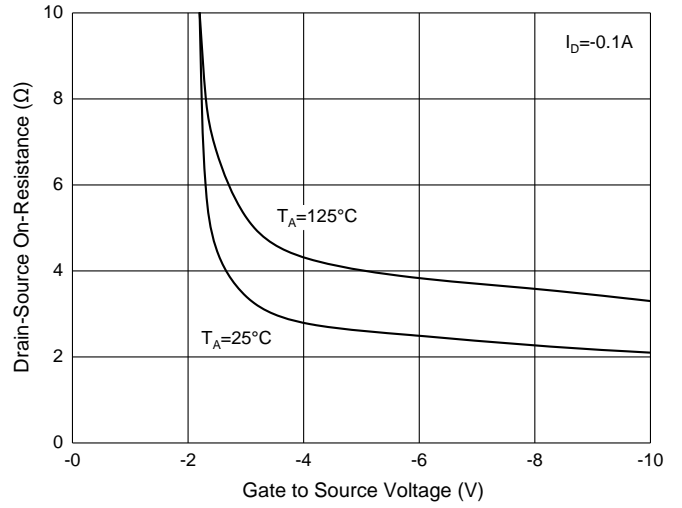


Fig. 5 - $I_S - V_{SD}$

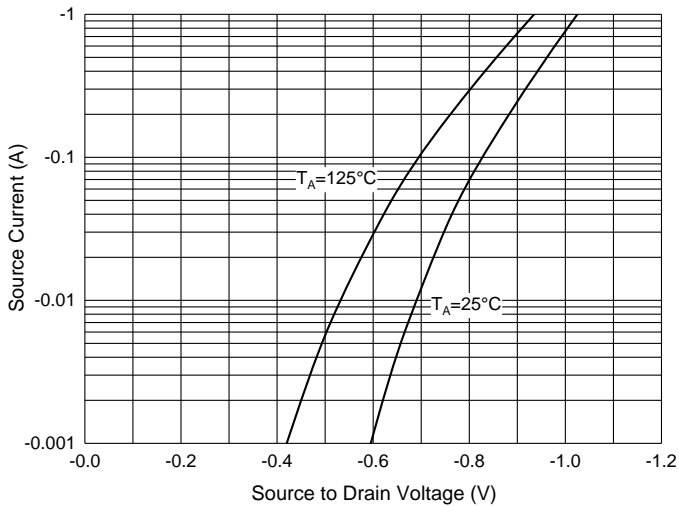
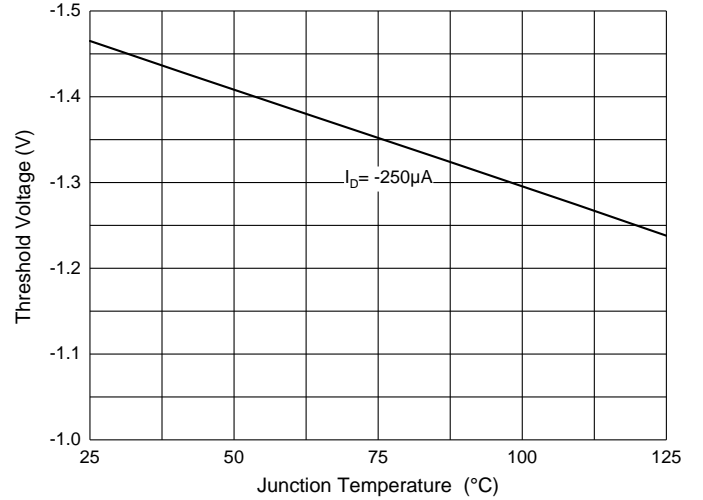
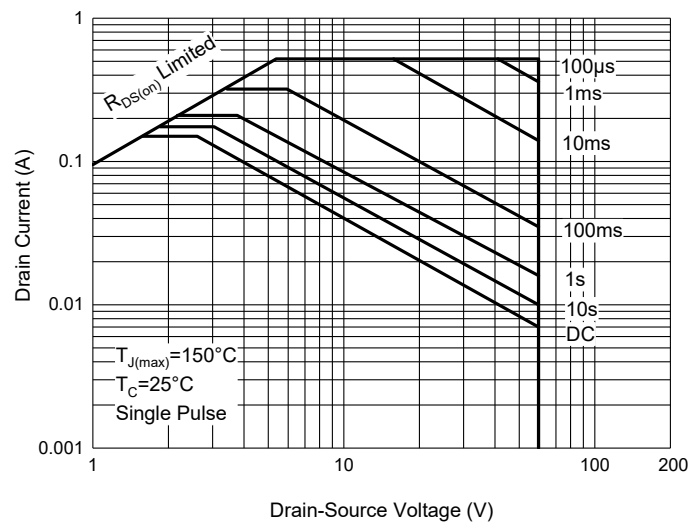


Fig. 6 - Threshold Voltage



Curve Characteristics

Fig. 7 - Safe Operation Area



Ordering Information

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

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