

Features

- ESD Protected up to 2KV (HBM)
- 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. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

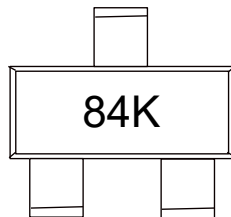
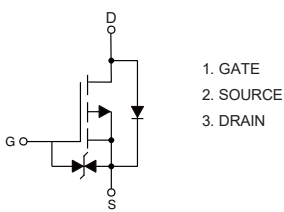
Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 461°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit	
Drain -source Voltage	V_{DS}	-60	V	
Gate -Source Voltage	V_{GS}	±20	V	
Continuous Drain Current	I_D	$T_A=25^\circ\text{C}$	-0.26	A
		$T_A=100^\circ\text{C}$	-0.16	A
Plused Drain Current (Note2)	I_{DM}	-1.04	A	
Power Dissipation (Note3)	P_D	0.27	W	

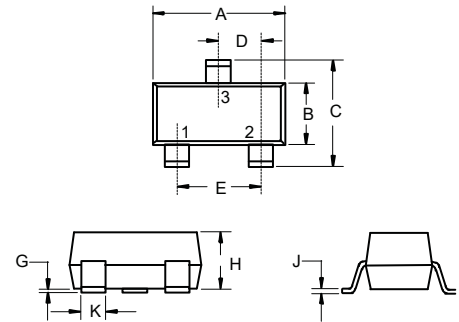
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 2. Repetitive rating: Pulse width limited by junction temperature.
 3. Surface mounted on FR4 board, $t \leq 10s$.

Internal Structure and Marking Code



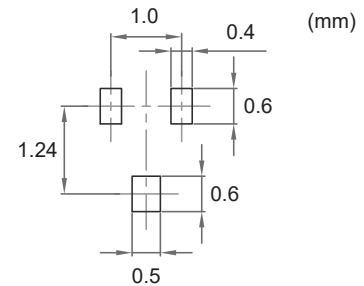
P-Channel MOSFET

SOT-523



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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-60			V
Gate-Threshold Voltage ^(Note 4)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1		-2	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)	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-0.2A$		2.2	6	Ω
		$V_{GS}=-4.5V, I_D=-0.1A$		2.5	7	
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-0.2A$			-1.3	V
Dynamic Characteristics^(Note 4)						
Input Capacitance	C_{iss}	$V_{DS}=-30V, V_{GS}=0V, f=1MHz$		32		pF
Output Capacitance	C_{oss}			2.3		
Reverse Transfer Capacitance	C_{rss}			1.6		
Total Gate Charge	Q_g	$V_{DS}=-30V, V_{GS}=-10V, I_D=-0.2A$		1.6		nC
Gate-Source Charge	Q_{gs}			0.4		
Gate-Drain Charge	Q_{gd}			0.2		
Switching Characteristics^(Note 5)						
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=-30V, V_{GEN}=-10V, R_G=3.9\Omega, R_L=150\Omega, I_{DS}=-0.2A$		5.5		ns
Turn-On Rise Time	t_r			4.8		
Turn-Off Delay Time	$t_{d(off)}$			27		
Turn-Off Fall Time	t_f			19		

 Note: 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 - Typical Output Characteristics

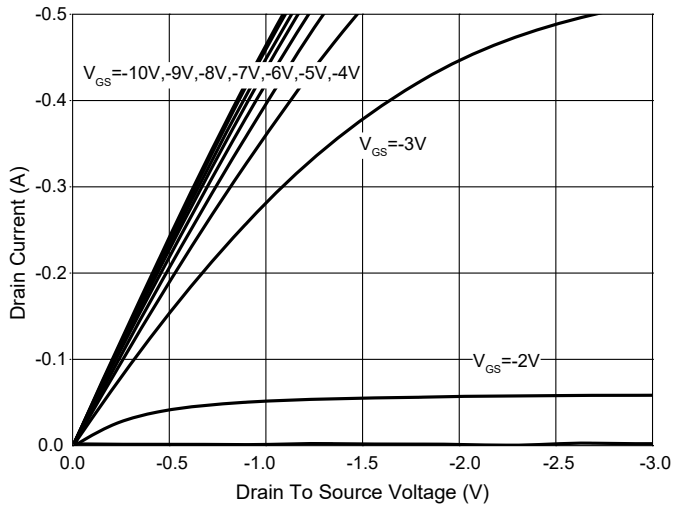


Fig. 2 - $R_{DS(ON)} - I_D$

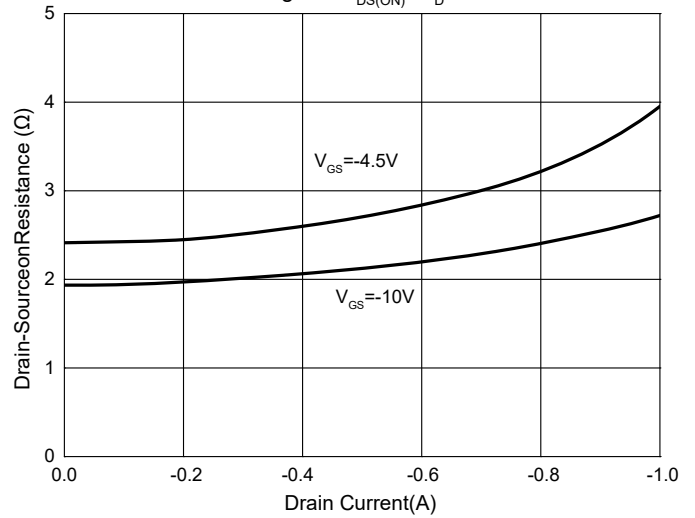


Fig. 3 - Normalized Threshold Voltage

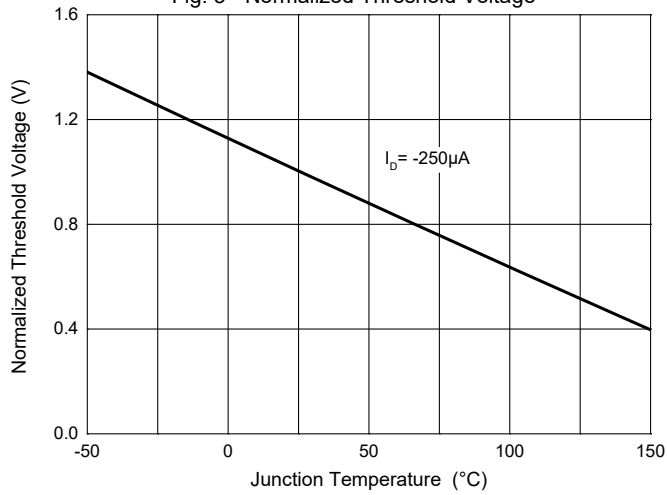


Fig. 4 - $I_S - V_{SD}$

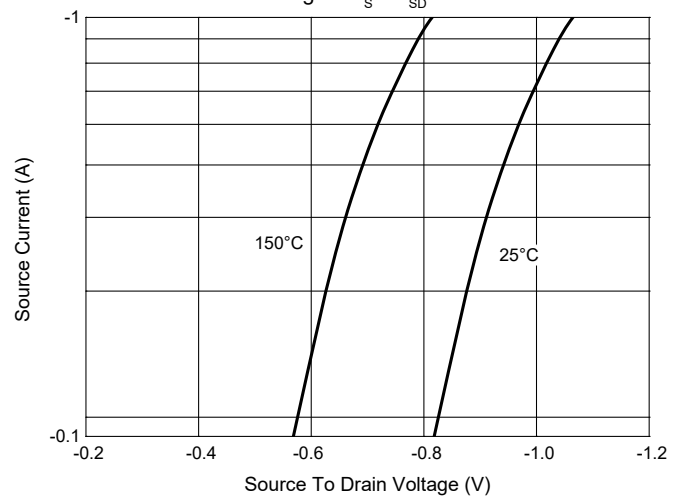


Fig.5 - Normalized On Resistance Characteristics

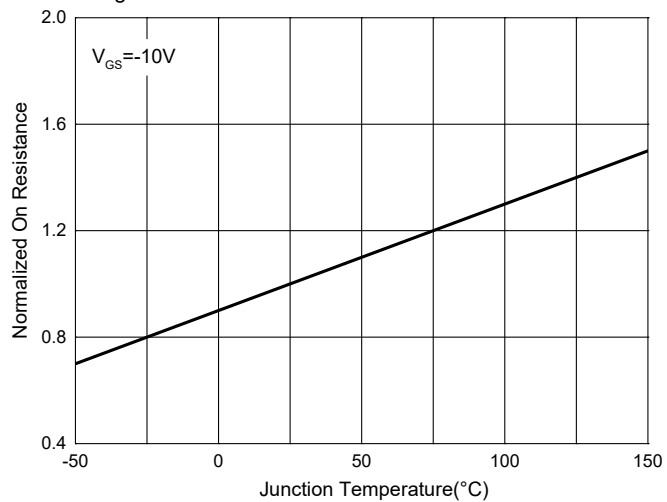
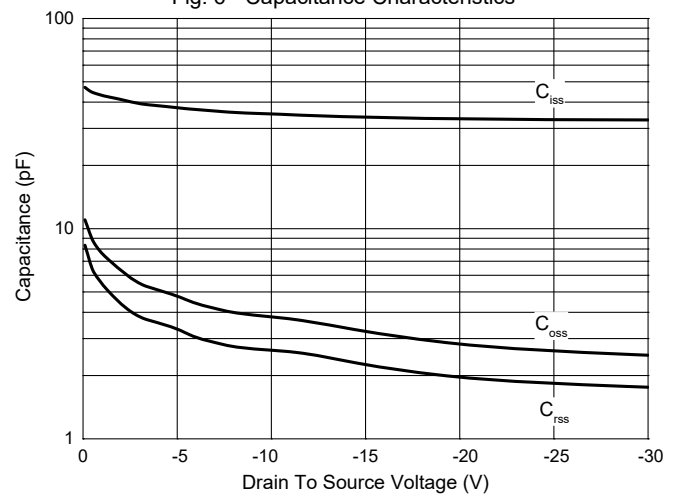


Fig. 6 - Capacitance Characteristics



Curve Characteristics

Fig. 7 - Gate Charge

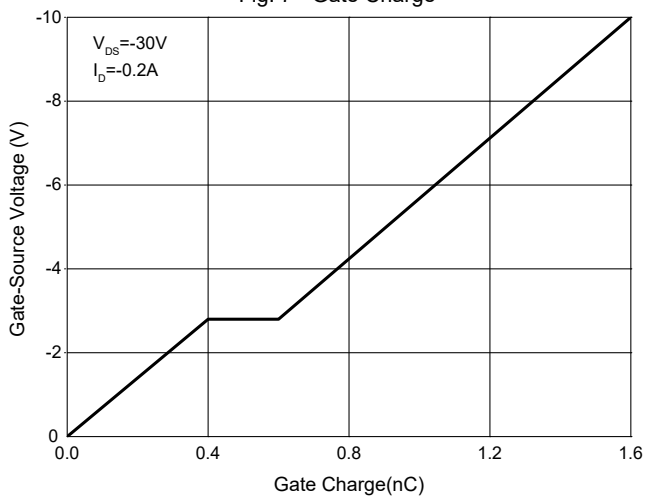


Fig. 8 - Safe Operation Area

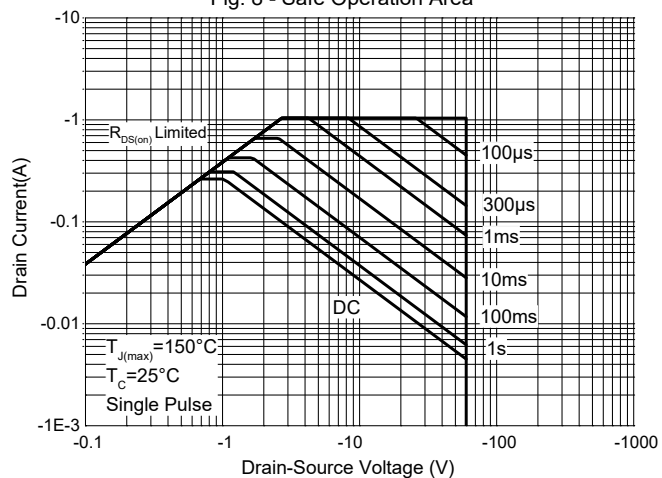
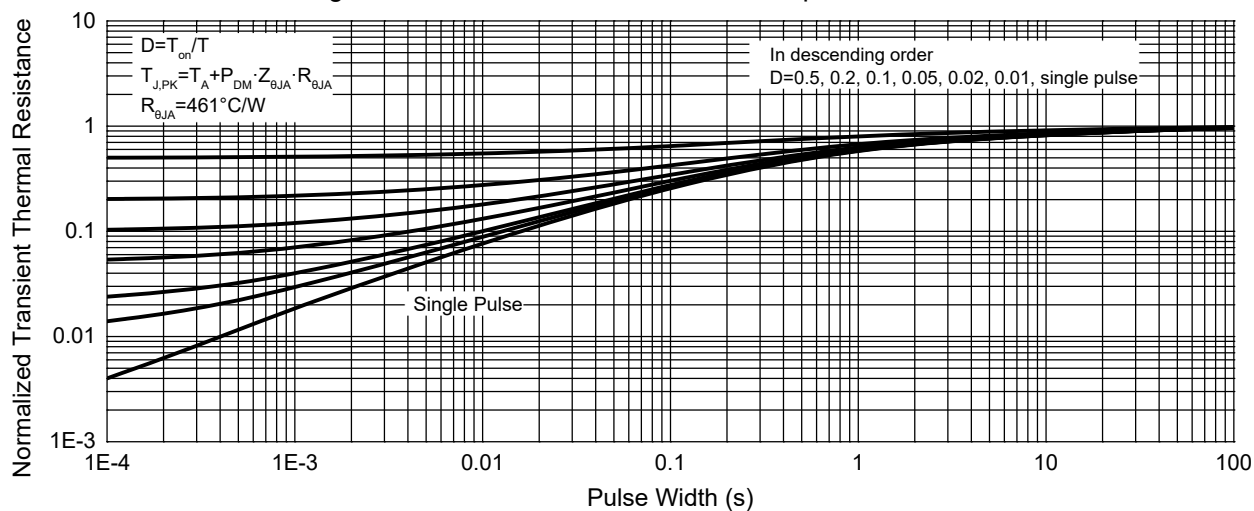


Fig. 9 - Normalized Transient Thermal Impedance



Ordering Information

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

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