Features

- Trench Power MV MOSFET Technology
- Excellent Package for Heat Dissipation
- High Density Cell Design for Low $R_{DS(on)}$
- 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)
- Moisture Sensitivity Level 3

Dual P-CHANNEL MOSFET

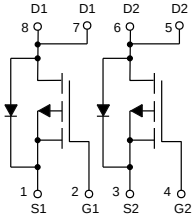
Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 42°C/W Junction to Ambient (2)
- Thermal Resistance: 5.9°C/W Junction to Case

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Volltage		V_{GS}	±10	V
Continuous Drain Current	T_A=25°C	I_D	-30	A
	T_A=100°C		-19	
Pulsed Drain Current (3)		I_{DM}	-55	A
Total Power Dissipation		P_D	21	W
Single Pulsed Avalanche Energy		E_{AS}	31	mJ

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. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Repetitive Rating: Pulse width limited by maximum junction temperature.

Internal Structure and Marking Code



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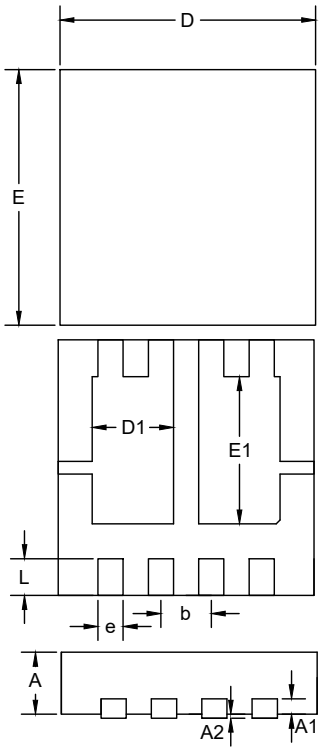


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.030	0.033	0.750	0.850	
A1	0.008		0.200		TYP
A2	-	0.002	-	0.050	
D	0.128	0.132	3.250	3.350	
E	0.128	0.132	3.250	3.350	
D1	0.039	0.043	1.000	1.100	
E1	0.073	0.077	1.850	1.950	
b	0.026		0.650		BSC
e	0.012	0.014	0.300	0.350	
L	0.017	0.021	0.425	0.525	

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=-250μA	-20			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±10V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V, V_{GS}=0V			-1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-0.4	-0.62	-1.0	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-4.5V, I_D=-15A		11	19	mΩ
		V_{GS}=-2.5V, I_D=-8A		14	22	
		V_{GS}=-1.8V, I_D=-6A		20	30	
Diode Characteristics						
Continuous Body Diode Current	I_S				-30	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-30A		-0.8	-1.2	V
Reverse Recovery Time	t_{rr}	I_S=-6A,di/dt=100A/μs		67		ns
Reverse Recovery Charge	Q_{rr}			34		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-10V,V_{GS}=0V,f=1MHz		2992		pF
Output Capacitance	C_{oss}			330		
Reverse Transfer Capacitance	C_{rss}			272		
Total Gate Charge	Q_g	V_{DS}=-15V,V_{GS}=-10V,I_D=-9.1A		72.8		nC
Gate-Source Charge	Q_{gs}			6.6		
Gate-Drain Charge	Q_{gd}			10.1		
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=-15V, V_{GS}=-10V, R_G=2.5Ω, I_D=-6A		7		ns
Turn-On Rise Time	t_r			33		
Turn-Off Delay Time	$t_{d(off)}$			130		
Turn-Off Fall Time	t_f			132		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

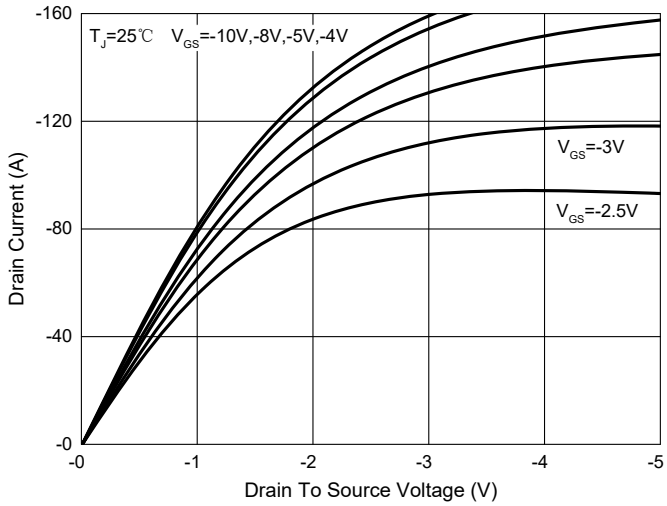


Fig. 2 - Transfer Characteristics

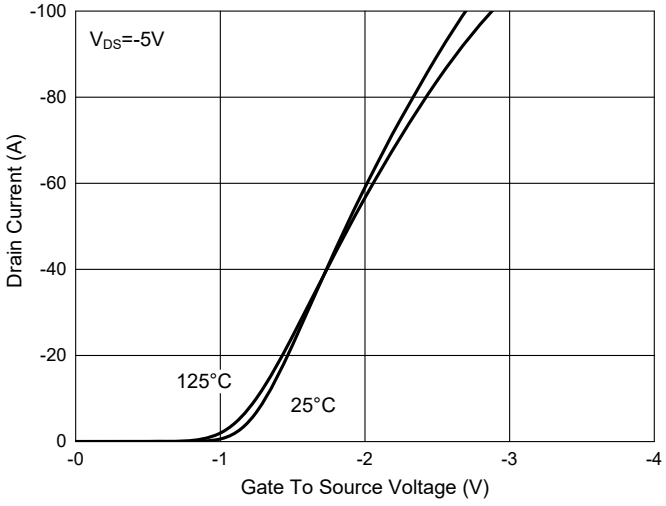


Fig. 3 - $R_{DS(ON)}$—I_D

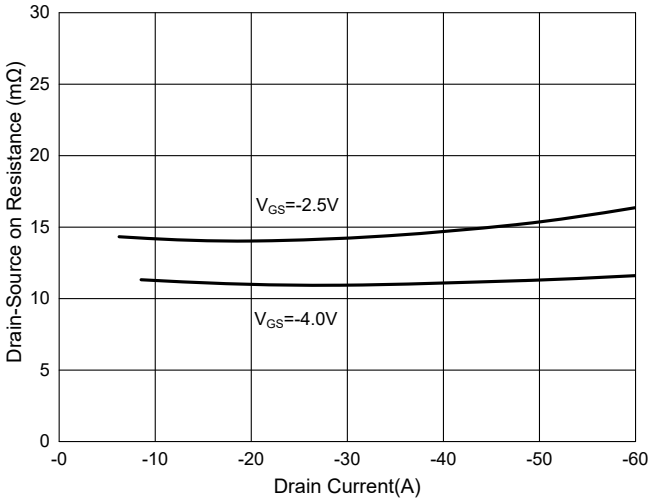


Fig. 4 - Normalized On Resistance Characteristics

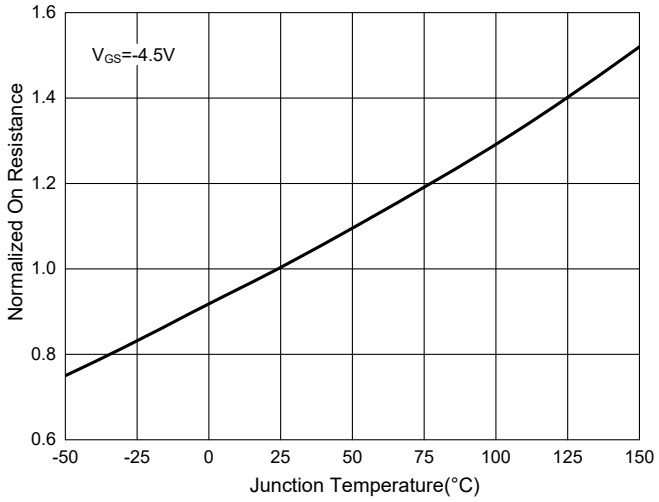


Fig. 5 - Capacitance Characteristics

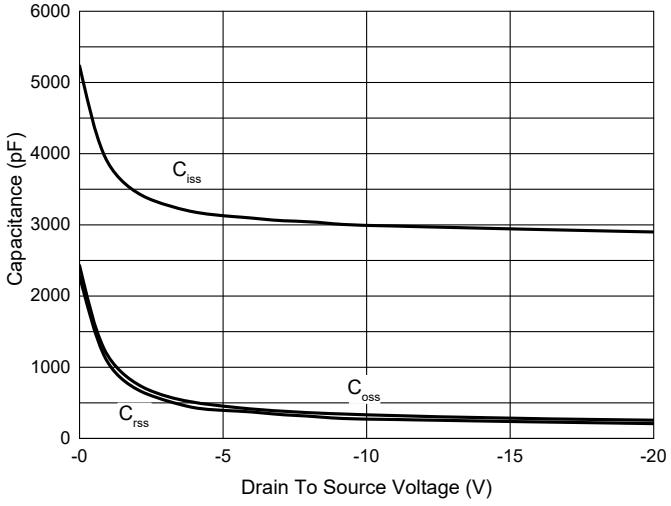
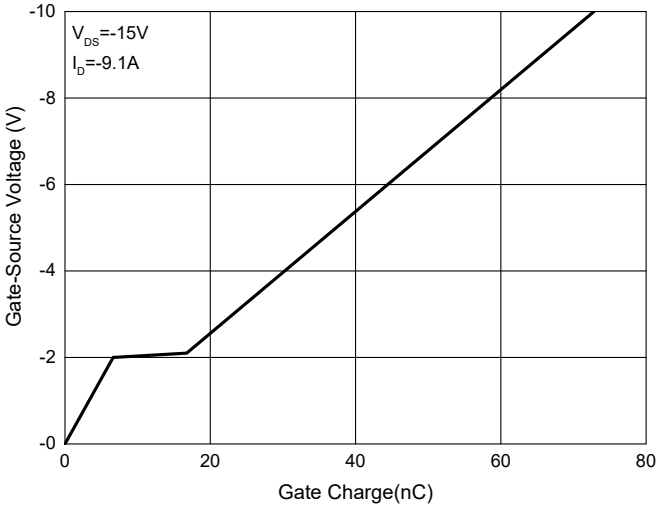


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Safe Operation Area

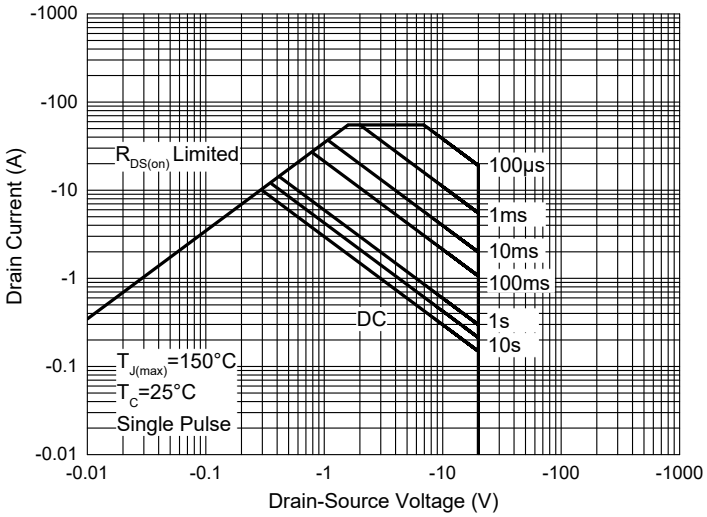
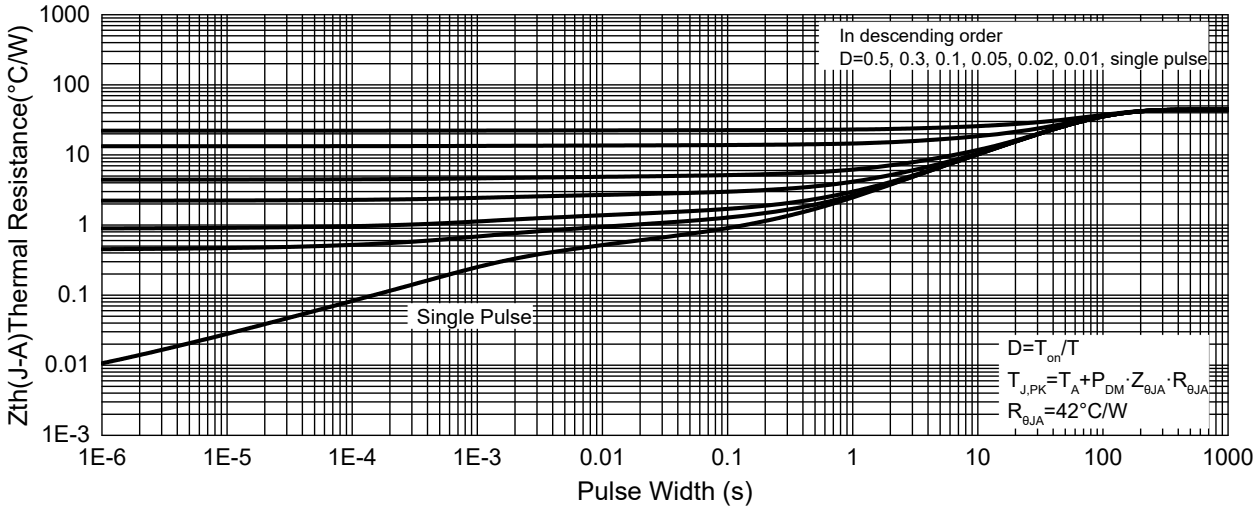


Fig. 8 - Maximum Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 5Kpcs/Reel

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Micro Commercial Components (MCC):

MCGD30P02-TP