Features

- Trench Power LV MOSFET Technology
- 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

P-CHANNEL MOSFET

Maximum Ratings

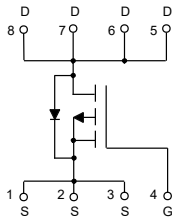
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 50°C/W Junction to Ambient(Note 2)
- Thermal Resistance: 5°C/W Junction to Case

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-60	V
Gate-Source Volltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25°C	I_D	-20	A
	T_C=100°C		-12	
Pulsed Drain Current(Note 3)		I_{DM}	-80	A
Total Power Dissipation(Note 4)		P_D	25	W
Single Pulsed Avalanche Energy(Note 5)		E_{AS}	100	mJ

Note:

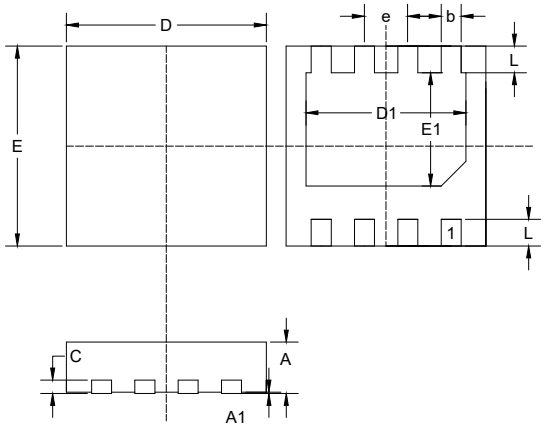
1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C. The Power dissipation P_{DSM} is based on $R_{\theta JA}$ t≤ 10s and the maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design.
3. Repetitive rating; pulse width limited by max. junction temperature.
4. P_D is based on max. junction temperature, using junction-case thermal resistance.
5. T_J=25°C, V_{DD}= -60V, V_{GS}= -10V, L= 0.5mH.

Internal Structure and Marking Code



pin1

DFN3333-8



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.028	0.031	0.70	0.80	
A1	0.000	0.002	0.00	0.05	
C	0.008		0.20		TYP.
b	0.010	0.014	0.25	0.35	
D	0.130		3.30		TYP.
E	0.130		3.30		TYP.
e	0.026		0.65		TYP.
D1	0.100	0.110	2.55	2.80	
E1	0.065	0.074	1.64	1.89	
L	0.013	0.021	0.325	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	-60			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-48V, V_{GS}=0V			-1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-1	-1.9	-3	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-20A		17.5	25	mΩ
		V_{GS}=-4.5V, I_D=-10A		23	34	
Gate Resistance	R_g	F=1MHz, Open Drain		5		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				-8	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-3A			-1.3	V
Reverse Recovery Time	t_{rr}	I_F=-4A, dI_F/dt=100A/μs		31		ns
Reverse Recovery Charge	Q_{rr}			26		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-25V,V_{GS}=0V,f=1MHz		1533		pF
Output Capacitance	C_{oss}			272		
Reverse Transfer Capacitance	C_{rss}			13		
Total Gate Charge	Q_g	V_{DS}=-30V,V_{GS}=-10V,I_D=-4A		23		nC
Gate-Source Charge	Q_{gs}			4		
Gate-Drain Charge	Q_{gd}			3		
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=-30V, V_{GEN}=-10V, R_G=6Ω, I_{DS}=-4A		7		ns
Turn-On Rise Time	t_r			5		
Turn-Off Delay Time	$t_{d(off)}$			65		
Turn-Off Fall Time	t_f			20		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

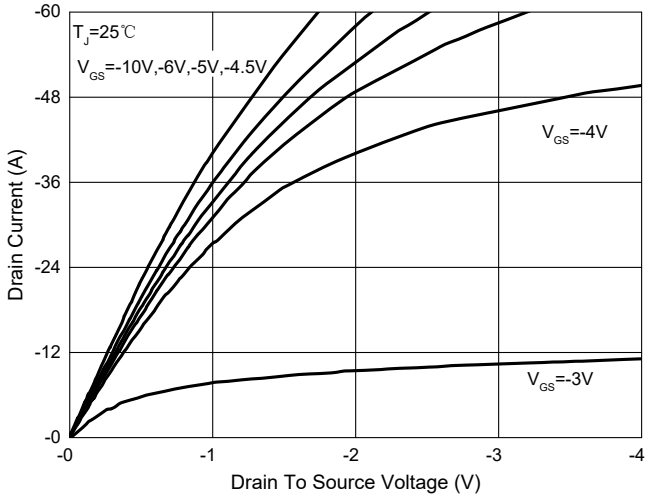


Fig. 2 - Transfer Characteristics

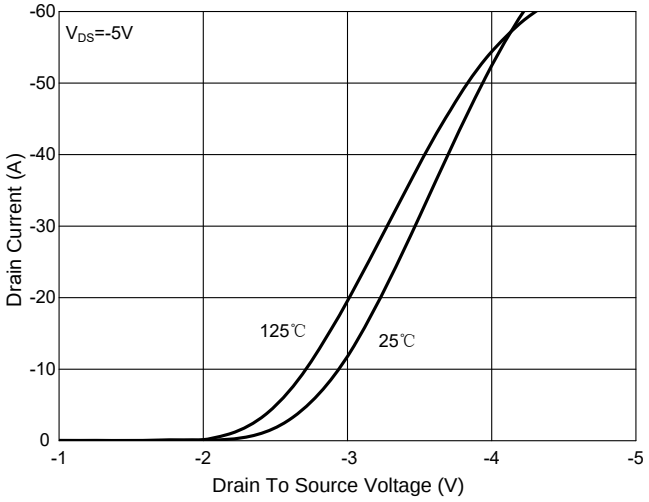


Fig. 3 - $R_{DS(ON)}$—V_{GS}

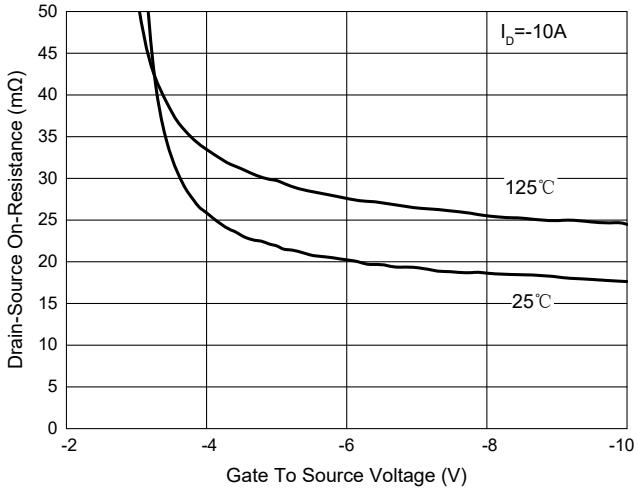


Fig. 4 - Normalized On Resistance Characteristics

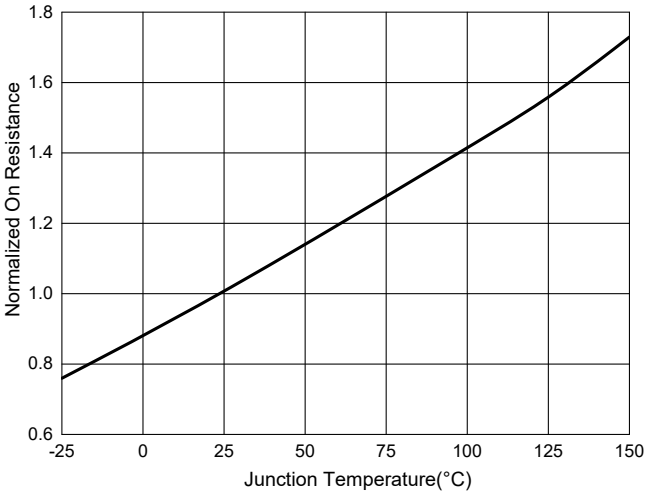


Fig. 5 - Capacitance Characteristics

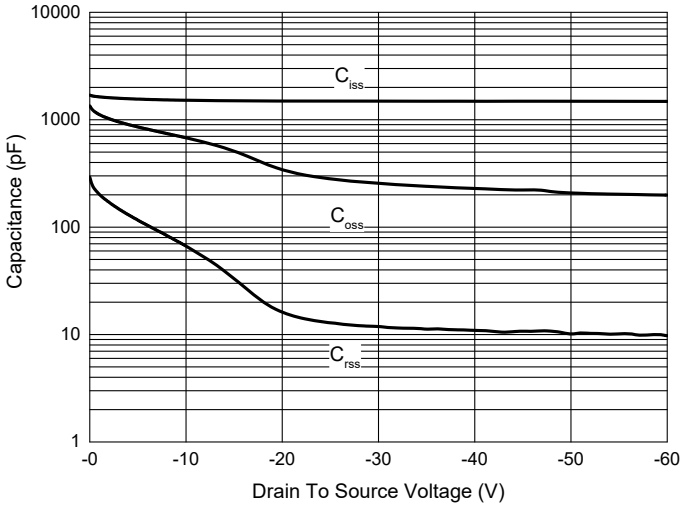
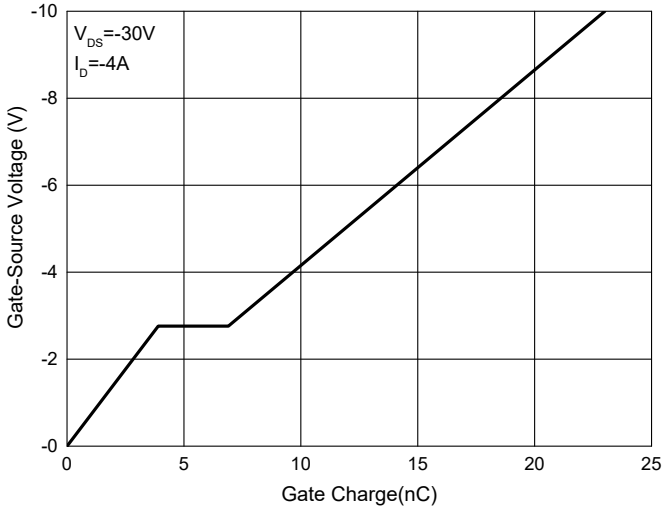


Fig. 8 - Gate Charge



Curve Characteristics

Fig. 7 - $R_{DS(ON)}$—I_D

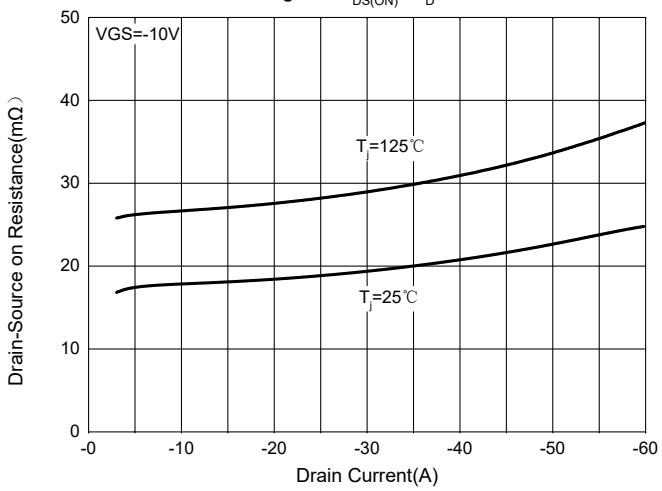


Fig. 8 - Threshold Voltage

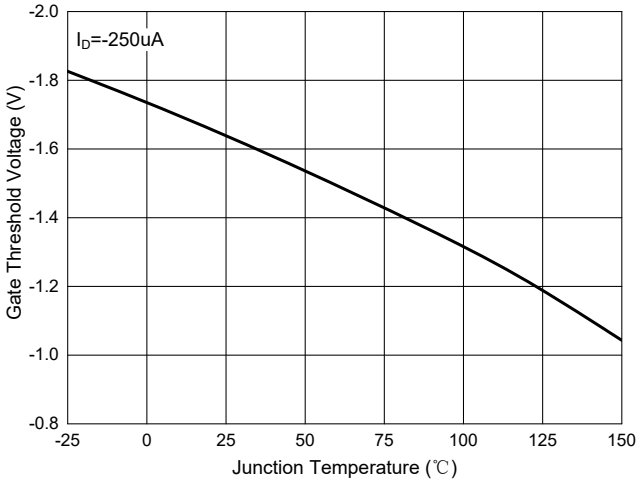


Fig. 9 - I_S—V_{SD}

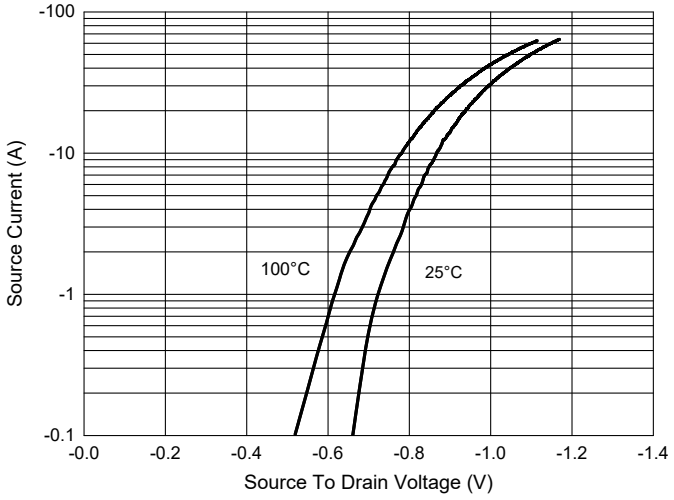


Fig. 10 - Current dissipation

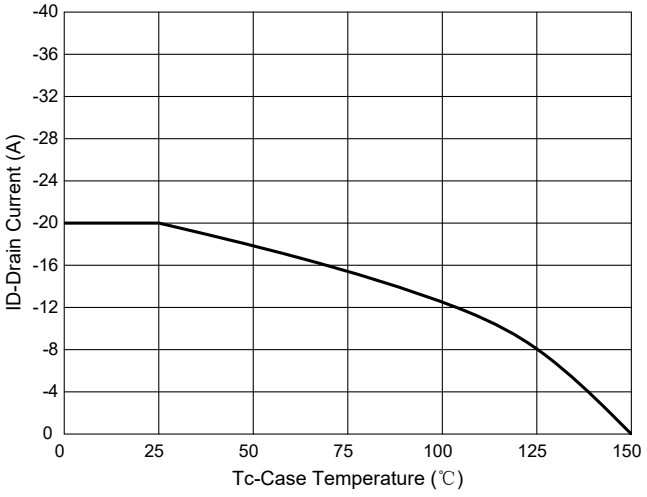
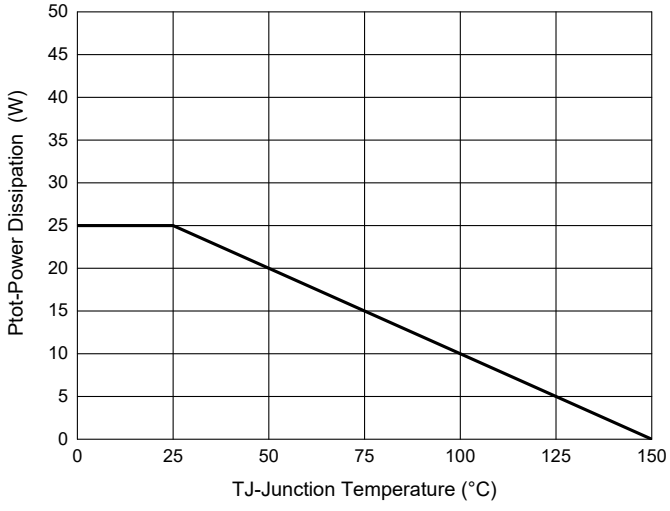


Fig. 11 - PD—TJ



Curve Characteristics

Fig. 12 - Safe Operation Area

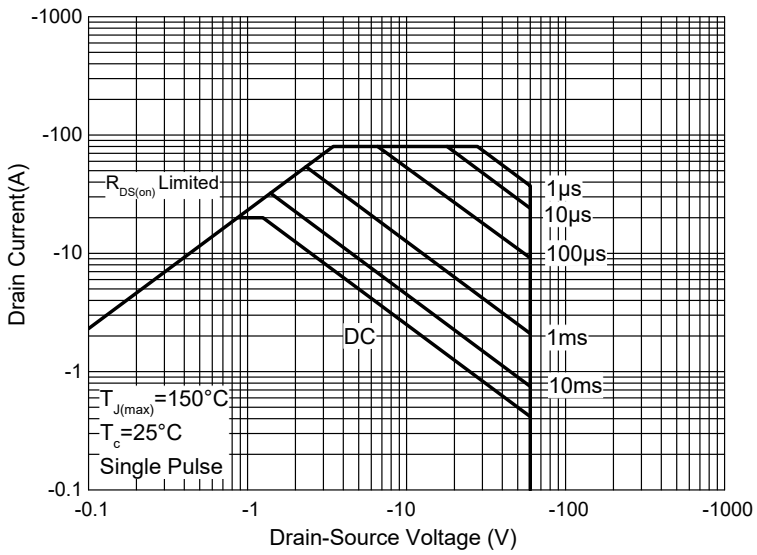
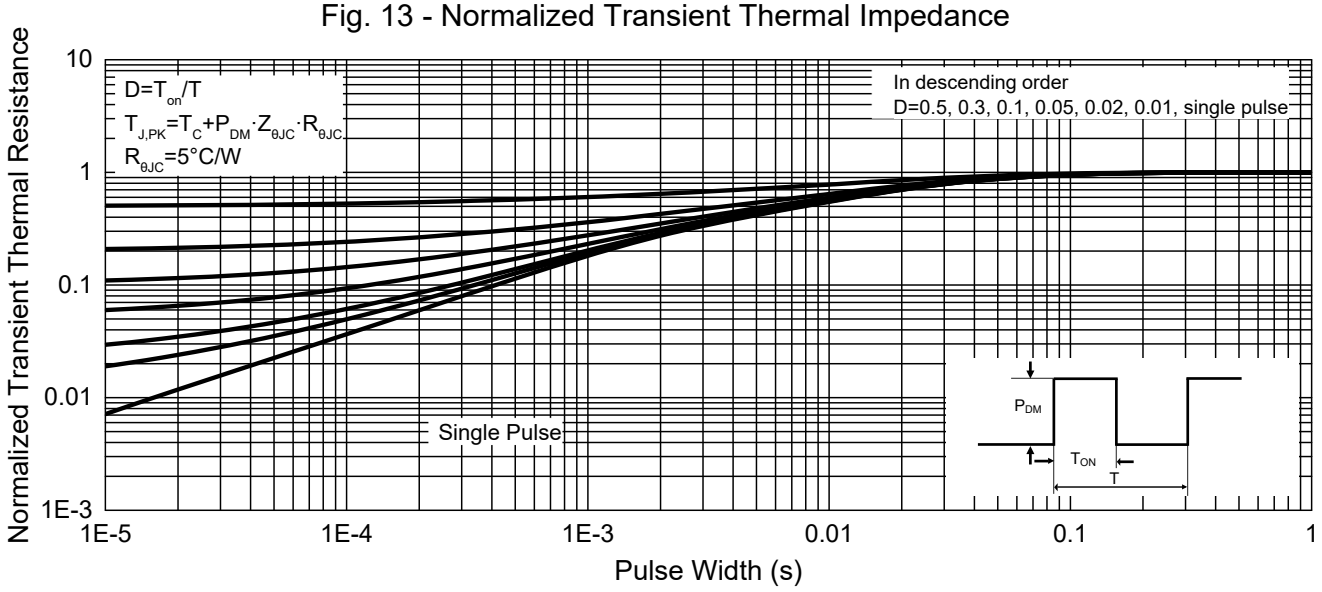


Fig. 13 - Normalized Transient Thermal Impedance



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):

MCG20P06-TP