Features

- Trench Power LV MOSFET Technology
- High Speed Switching
- High Density Cell Design for 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)

P-CHANNEL MOSFET

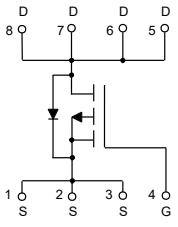
Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 1.5°C/W Junction to Case

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Volltage	V_{GS}	±25	V
Continuous Drain Current	I_D	-50	A
Pulsed Drain Current (Note 2)	I_{DM}	-200	A
Avalanche Energy	E_{AS}	73	mJ
Total Power Dissipation	P_D	83	W

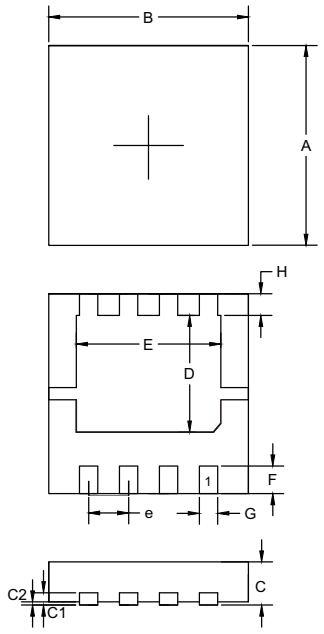
Note: 1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Pulse Test: Pulse Width≤300μs,Duty cycle ≤2%.

Internal Structure and Marking Code



pin1

DFN3333



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.126	0.130	3.20	3.30	
B	0.126	0.130	3.20	3.30	
C	0.030	0.033	0.75	0.85	
C1	0.007	0.009	0.18	0.22	
C2	---	0.002	---	0.05	
D	0.071	0.079	1.80	2.00	
E	0.087	0.098	2.20	2.50	
F	0.016	0.020	0.40	0.50	
G	0.010	0.014	0.25	0.35	
H	0.012	0.016	0.30	0.40	
e	0.024	0.028	0.60	0.70	

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	-30			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±25V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V, V_{GS}=0V			-1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-1.2	-1.8	-2.8	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-15A		5.0	6.2	mΩ
		V_{GS}=-4.5V, I_D=-10A		6.9	11	mΩ
Diode Characteristics						
Continuous Body Diode Current	I_S				-50	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-20A			-1.2	V
Reverse Recovery Time	t_{rr}	I_F=-20A, dI_F/dt=100A/μs		24		ns
Reverse Recovery Charge	Q_{rr}			8.5		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-15V,V_{GS}=0V,f=1MHz		6464		pF
Output Capacitance	C_{oss}			779		
Reverse Transfer Capacitance	C_{rss}			477		
Total Gate Charge	Q_g	V_{DS}=-15V,V_{GS}=-10V,I_D=-20A		111.7		nC
Gate-Source Charge	Q_{gs}			21.1		
Gate-Drain Charge	Q_{gd}			22.9		
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=-15V, V_{GS}=-10V, R_G=3Ω, I_{DS}=-20A		15		ns
Turn-On Rise Time	t_r			79		
Turn-Off Delay Time	$t_{d(off)}$			136		
Turn-Off Fall Time	t_f			80		

Fig. 1 - Typical Output Characteristics

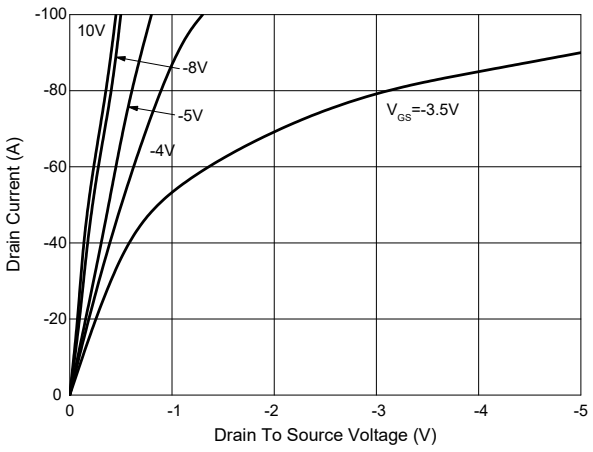


Fig. 2 - Transfer Characteristics

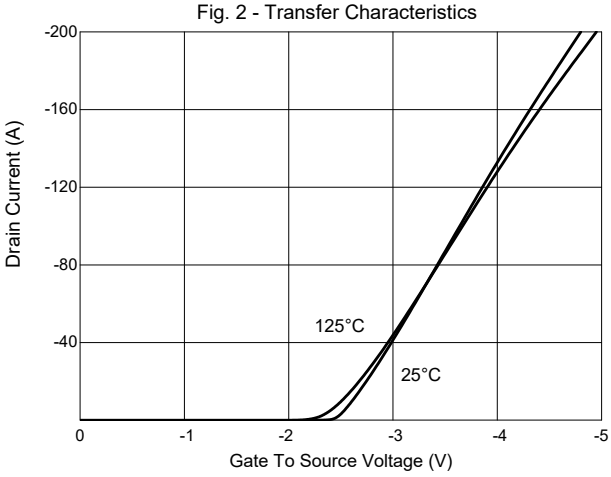


Fig. 3 - $R_{DS(ON)}$—I_D

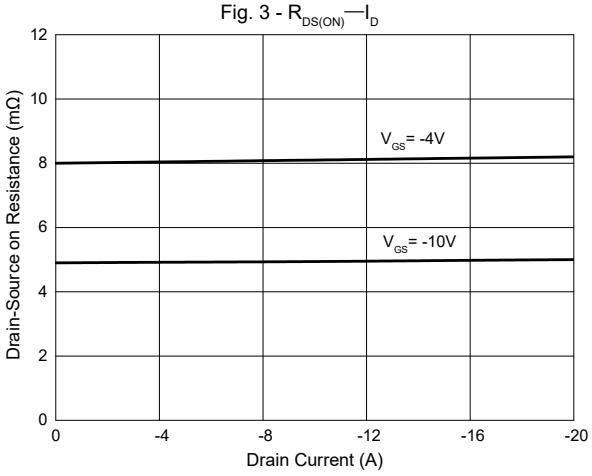


Fig. 4 - Drain-Source on Resistance

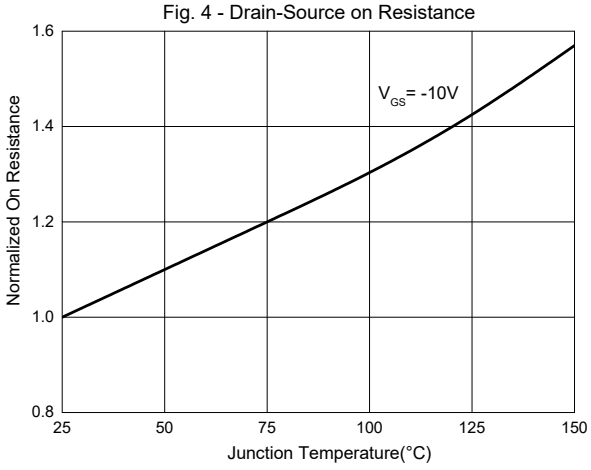


Fig. 5 - Capacitance Characteristics

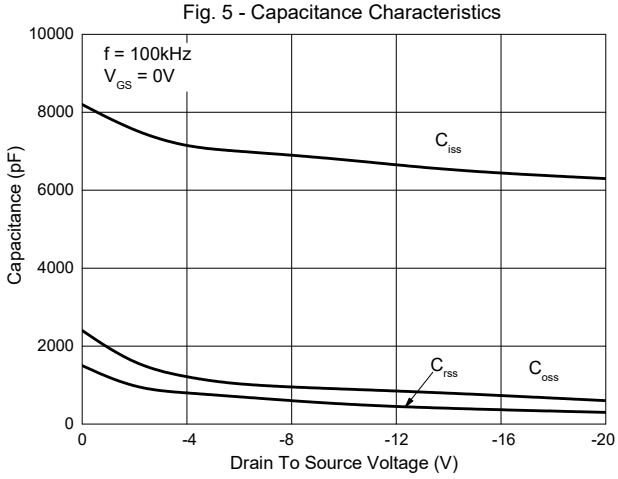


Fig. 6 - Gate Charge

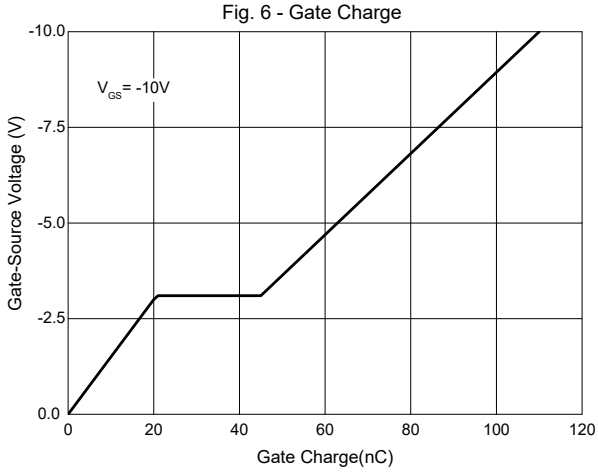


Fig. 7 - Safe Operation Area

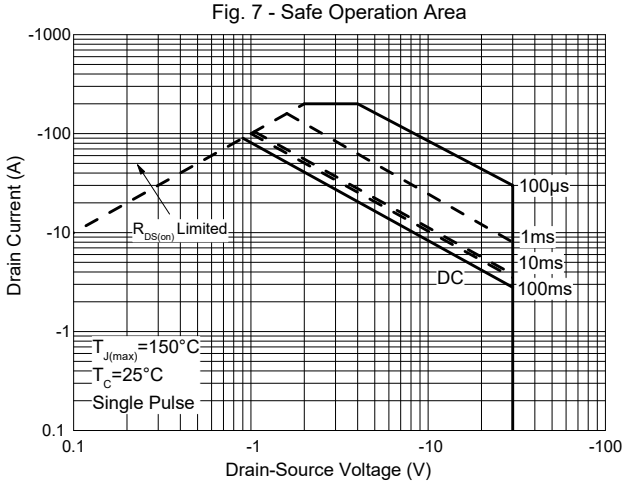


Fig. 8 - Threshold Voltage

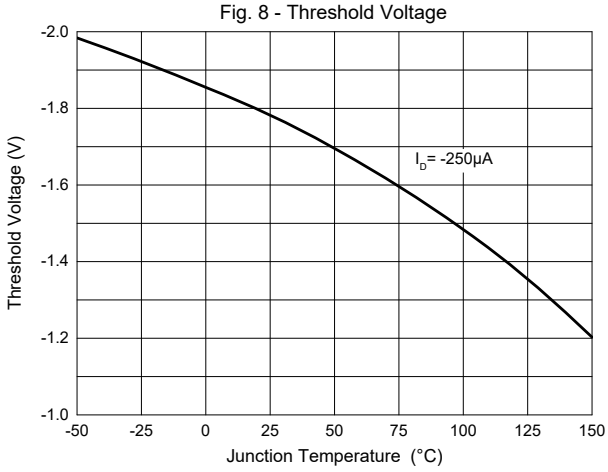
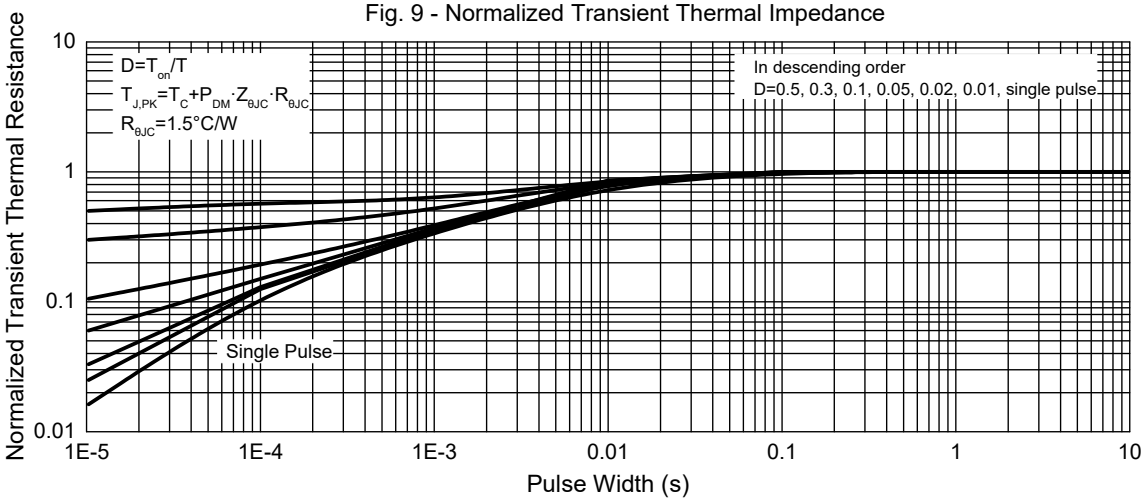


Fig. 9 - Normalized Transient Thermal Impedance



Ordering Information

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