Features

- Split Gate Trench Power MV MOSFET Technology
- Low Gate Charge
- 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)

N-CHANNEL MOSFET

Maximum Ratings

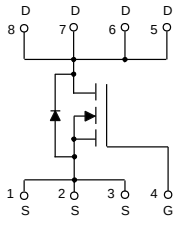
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 17°C/W Junction to Ambient(t≤10s)(Note 2)
- Thermal Resistance: 55°C/W Junction to Ambient(Steady-State)(Note2,3)
- Thermal Resistance: 1.8°C/W Junction to Case(Steady-State)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Volltage		V_{GS}	±20	V
Continuous Drain Current(Note 4)	T_C=25°C	I_D	53	A
	T_C=100°C		34	A
Pulsed Drain Current (Note 5)		I_{DM}	110	A
Single Pulse Avalanche Energy (Note 5)		E_{AS}	195	mJ
Total Power Dissipation(Note 2)	T_C=25°C	P_D	70	W
	T_C=100°C		28	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. 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. The $R_{\theta JA}$ is the Sum of the Thermal Impedance from Junction to Case $R_{\theta JC}$ and Case to Ambient.
4. The Maximum Current Rating is Package Limited.
5. Single Pulse Width Limited by Junction Temperature $T_{J(MAX)}$=175°C.

Internal Structure



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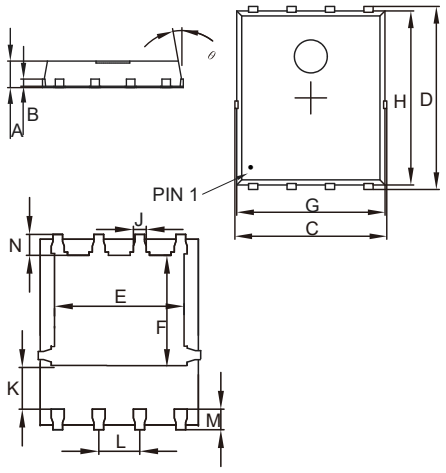


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.031	0.047	0.80	1.20	
B	0.010		0.254		TYP.
C	0.193	0.222	4.90	5.64	
D	0.232	0.250	5.90	6.35	
E	0.148	0.167	3.75	4.25	
F	0.126	0.154	3.20	3.92	
G	0.189	0.213	4.80	5.40	
H	0.222	0.239	5.65	6.06	
K	0.045	0.059	1.15	1.50	
J	0.012	0.020	0.30	0.50	
L	0.046	0.054	1.17	1.37	
M	0.012	0.028	0.30	0.71	
N	0.016	0.028	0.40	0.71	

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	65		V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			1	μA
		V_{DS}=60V, V_{GS}=0V,T_J=55°C			5	
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1.1	1.7	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=20A		5.3	7.5	mΩ
		V_{GS}=4.5V, I_D=10A		6.9	9.5	
Forward Tranconductance	g_{FS}	V_{DS}=5V, I_D=20A	30			S
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=20A		0.85	0.99	V
Continuous Body Diode Current	I_S				53	A
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=30V,V_{GS}=0V,f=1MHz		1988		pF
Output Capacitance	C_{oss}			470		
Reverse Transfer Capacitance	C_{rss}			14		
Gate Resistance	R_g	V_{DS}=0V,V_{GS}=0V,f=1MHz		1.6		Ω
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS}=30V,V_{GS}=4.5V,I_D=20A		16		nC
Total Gate Charge	Q_g	V_{DS}=30V,V_{GS}=10V,I_D=20A		31		
Gate-Source Charge	Q_{gs}			6		
Gate-Drain Charge	Q_{gd}			5		
Reverse Recovery Chrage	Q_{rr}	I_S=20A, di/dt=500A/μs		58		
Reverse Recovery Time	t_{rr}			17		ns
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V, V_{DS}=15V, R_L=2.5Ω, R_{GEN}=3Ω		10.5		
Turn-On Rise Time	t_r			4.5		
Turn-Off Delay Time	$t_{d(off)}$			29.5		
Turn-Off Fall Time	t_f			8		

Curve Characteristics

Fig. 1 - Output Characteristics

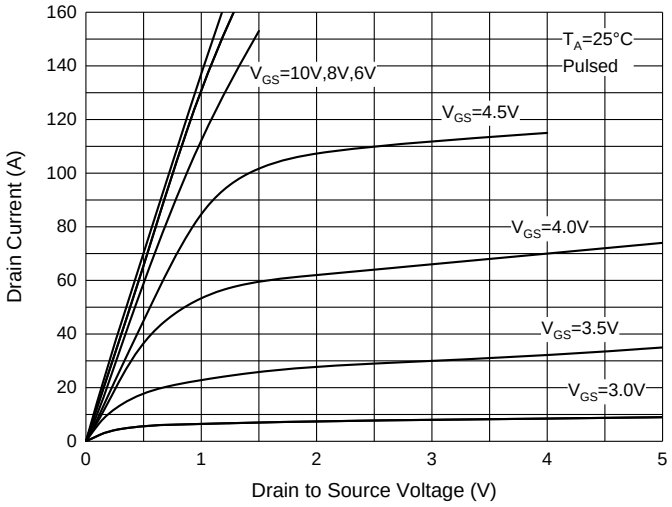


Fig. 2 - Transfer Characteristics

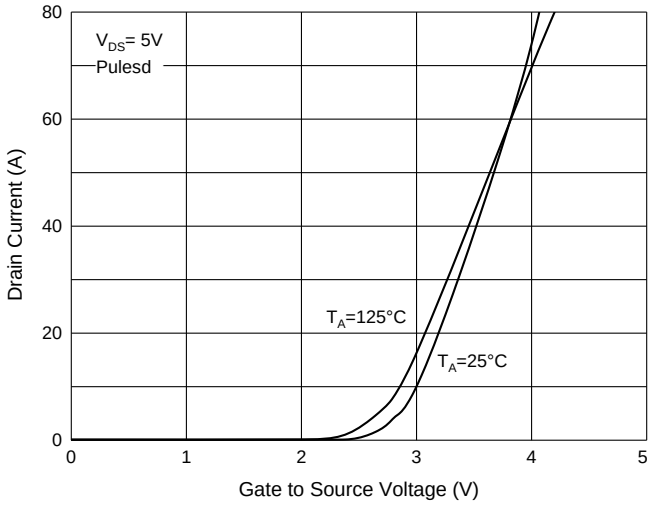


Fig. 3 - $R_{DS(ON)}$—I_D

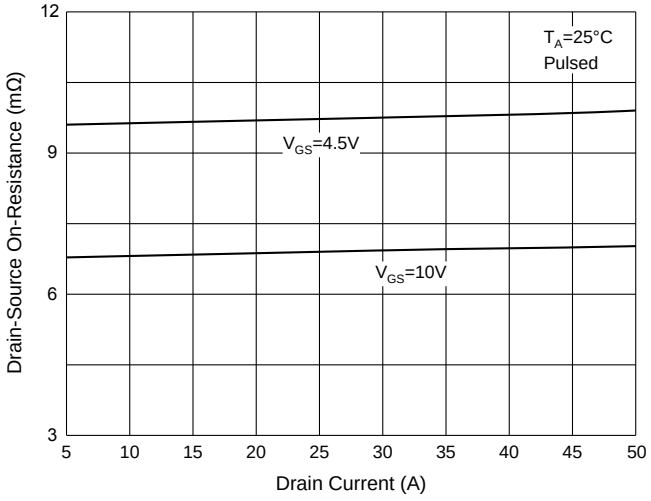


Fig. 4 - I_S—V_{SD}

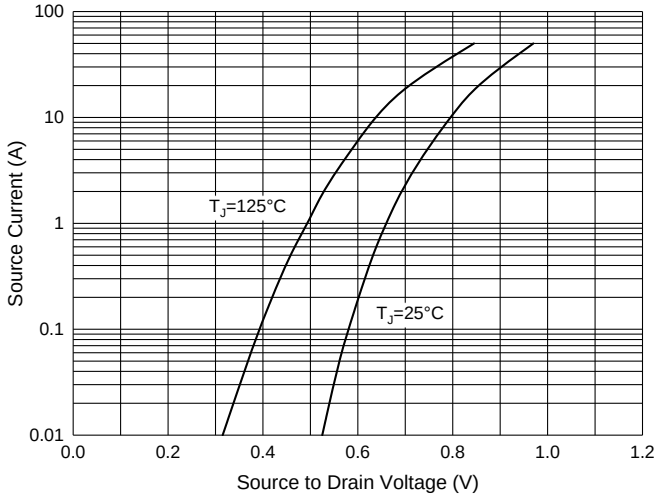


Fig. 5 - Gate Charge

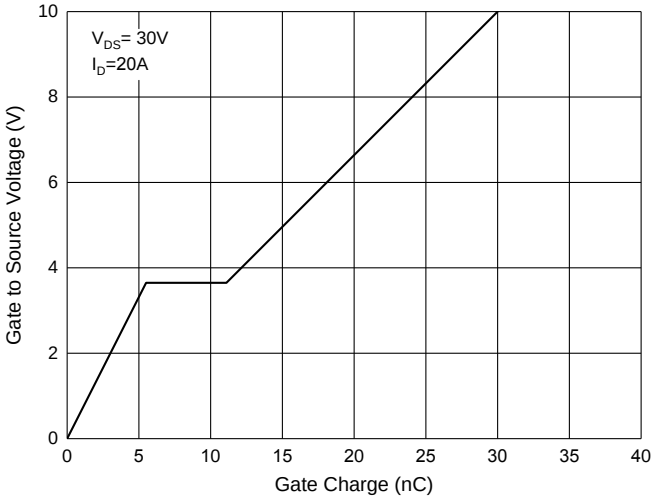
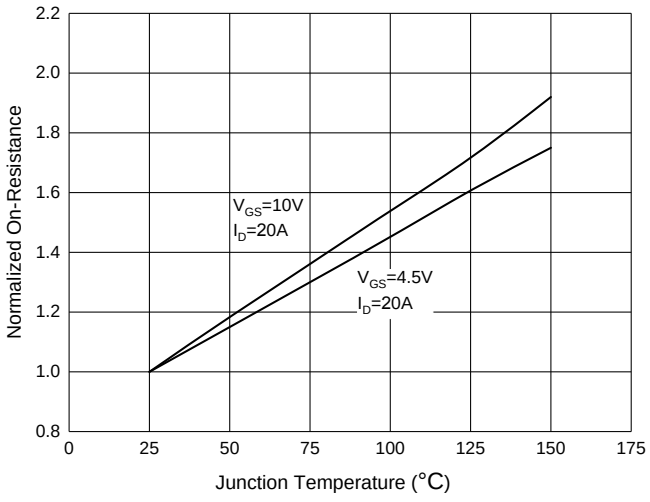


Fig. 6 - $R_{DS(ON)}$—Temperature



Ordering Information

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

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