Features

- Split Gate Trench MOSFET Technology
- Excellent package for heat dissipation
- Moisture Sensitivity Level 1
- 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)

N-CHANNEL MOSFET

Maximum Ratings

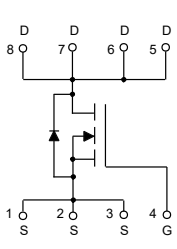
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance:50°C/W Junction to Ambient(Note2)
- Thermal Resistance:1.4°C/W Junction to Case

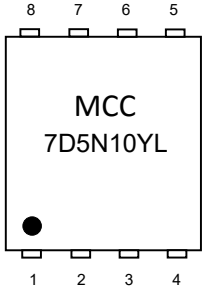
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Volltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25°C	I_D	75	A
	T_C=100°C		47	
Pulsed Drain Current (Note3)		I_{DM}	300	A
Total Power Dissipation(Note4)		P_D	89	W
Single Pulse Avalanche Energy (Note 5)		E_{AS}	225	mJ

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.
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}=50V, V_{GS}=10V, R_G=25Ω, L=2mH.

Internal Structure and Marking Code





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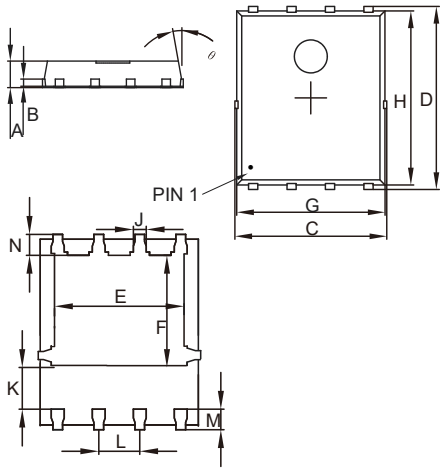


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.039	0.047	0.80	1.20	
B	0.010		0.254		TYP.
C	0.203	0.219	5.15	5.55	
D	0.234	0.250	5.95	6.35	
E	0.154	0.170	3.92	4.32	
F	0.139	0.154	3.52	3.92	
G	0.197	0.213	5.00	5.40	
H	0.223	0.239	5.66	6.06	
K	0.0444	0.052	1.12	1.32	
J	0.016	0.020	0.41	0.51	
L	0.046	0.054	1.17	1.37	
M	0.022	0.030	0.56	0.76	
N	0.016	0.024	0.40	0.60	

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	100			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V			1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1.3	1.9	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=30A		6	7.5	mΩ
		V_{GS}=4.5V, I_D=20A		7.6	9.5	
Gate Resistance	R_G	f=1MHz, Open drain		1.5		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				75	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=30A			1.2	V
Reverse Recovery Time	t_{rr}	I_F=30A,di/dt=100A/μs		55		ns
Reverse Recovery Charge	Q_{rr}			87		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=50V,V_{GS}=0V,f=1MHz		2460		pF
Output Capacitance	C_{oss}			920		
Reverse Transfer Capacitance	C_{rss}			16		
Total Gate Charge	Q_g	V_{DS}=50V,V_{GS}=10V,I_D=30A		39		nC
Gate-Source Charge	Q_{gs}			8		
Gate-Drain Charge	Q_{gd}			7		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=50V, V_{GS}=10V, R_G=2.2Ω, I_D=30A		15		ns
Turn-On Rise Time	t_r			62		
Turn-Off Delay Time	$t_{d(off)}$			27		
Turn-Off Fall Time	t_f			5		

Curve Characteristics

Fig.1 - Typical Output Characteristics

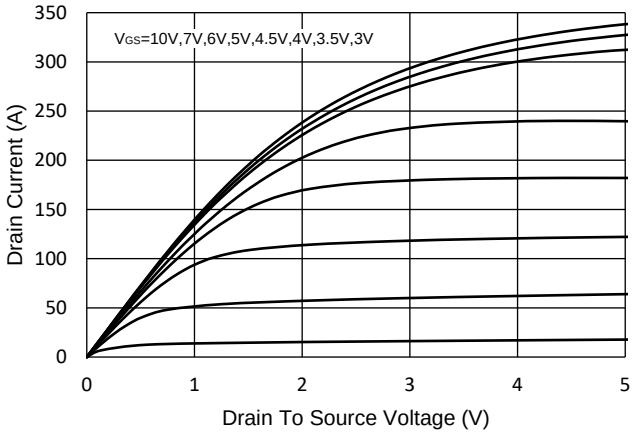


Fig.2 - Transfer Characteristic

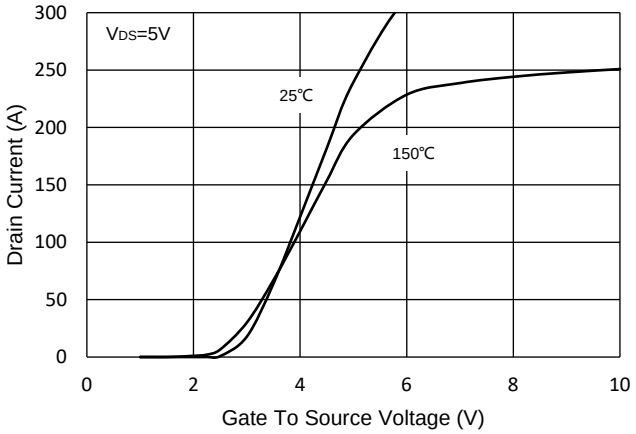


Fig.3 - $R_{DS(ON)}$ - V_{GS}

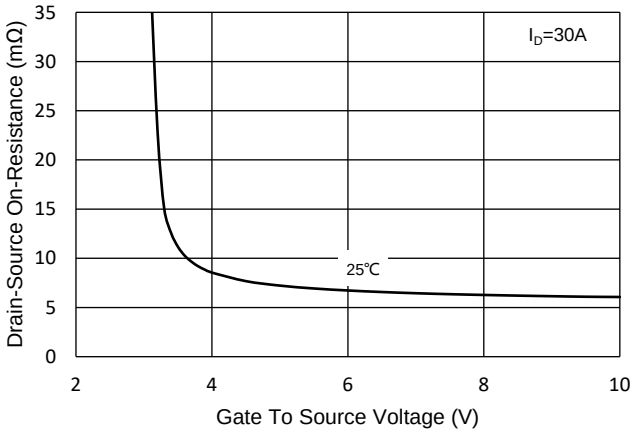


Fig. 4 - $R_{DS(ON)}$—I_D

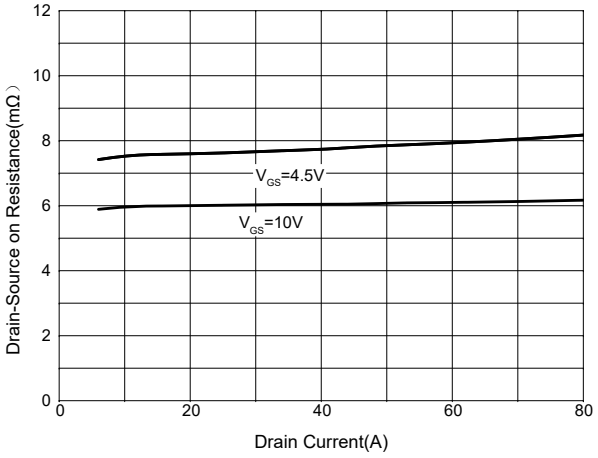


Fig.5 - Capacitance Characteristics

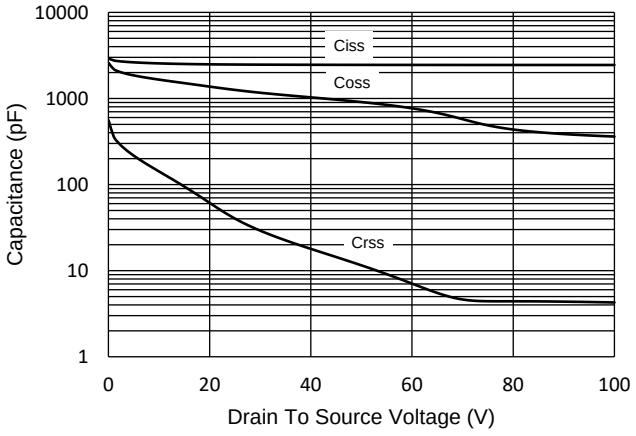
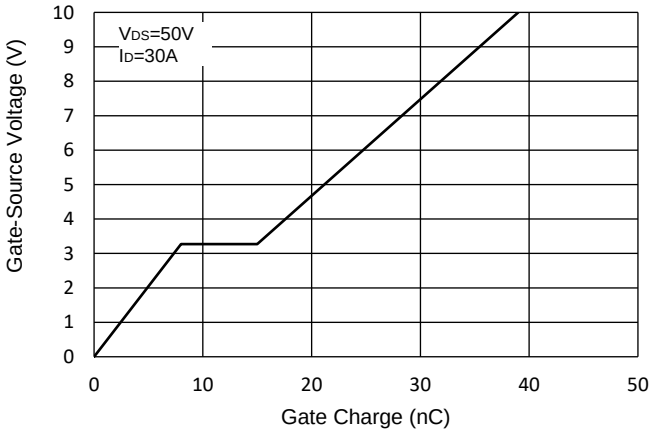


Fig.6 - Gate Charge



Curve Characteristics

Fig.7 - Normalized Threshold Voltage

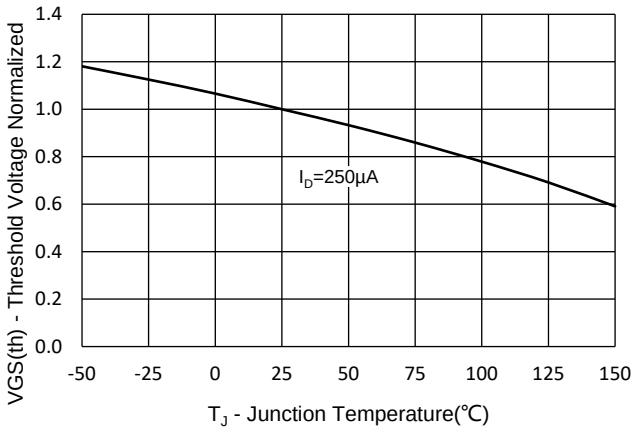


Fig.8 - Normalized On Resistance Characteristics

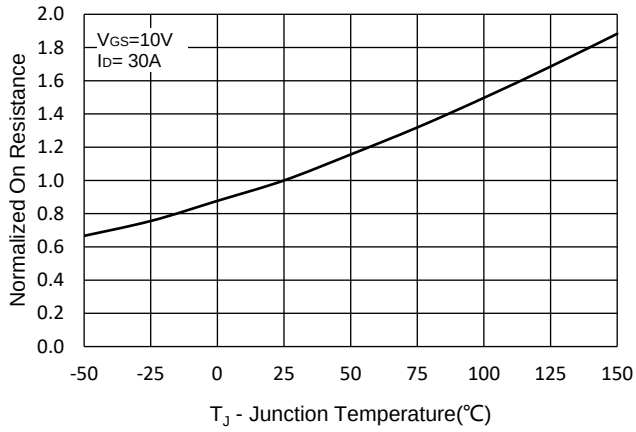


Fig.9 - I_S - V_{SD}

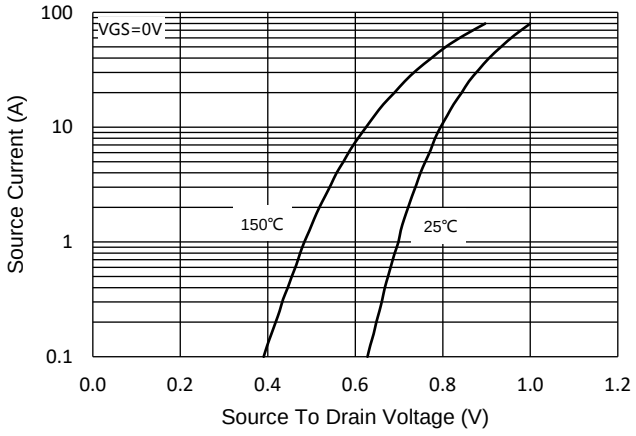


Fig.10 - Drain Current

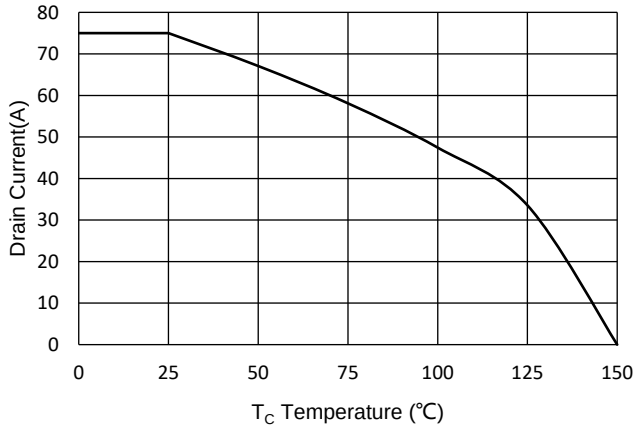
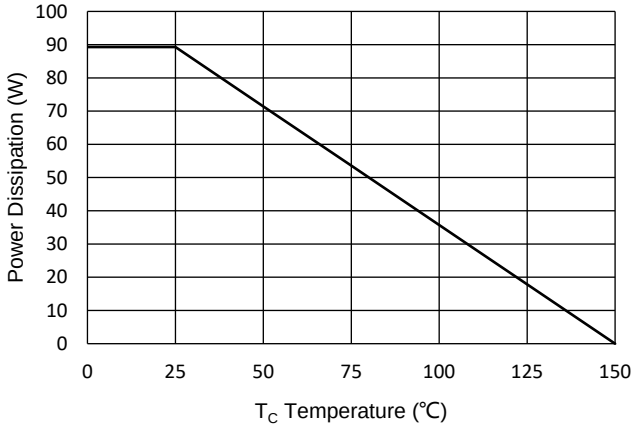


Fig.11 - PD Dissipation



Curve Characteristics

Fig.12 - Safe Operation Area

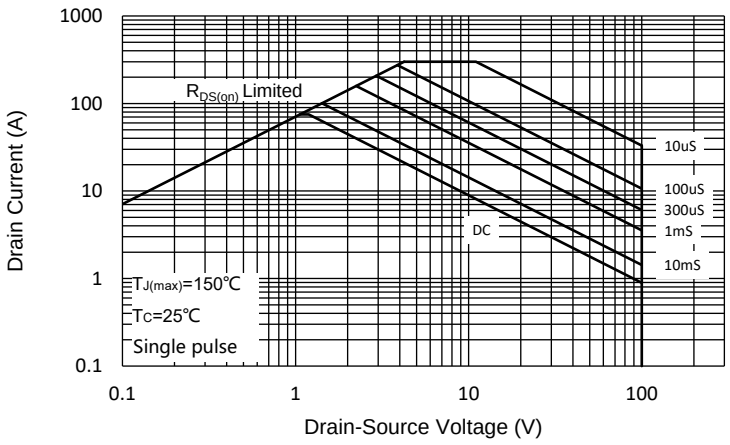
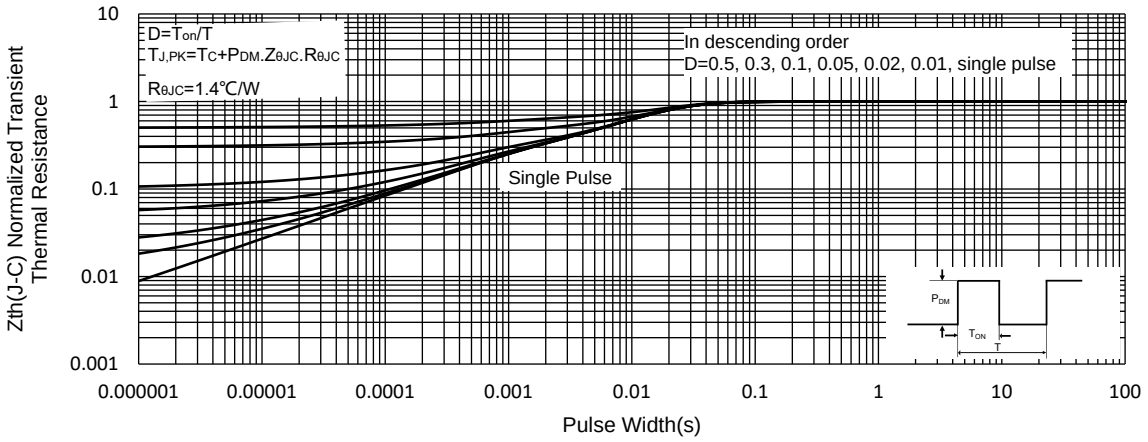


Fig.13 - Normalized Transient Thermal Impedance



Ordering Information

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

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