

Features

- Trench MV MOSFET Technology
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note 2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

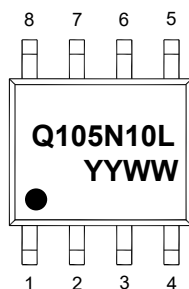
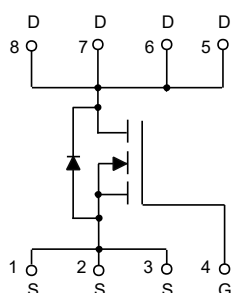
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 66°C/W Junction to Ambient (Note 3)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	2.7	A
		1.7	
Pulsed Drain Current (Note 4)	I_{DM}	10.8	A
Total Power Dissipation (Note 5)	P_D	1.9	W
Single Pulsed Avalanche Energy (Note 6)	E_{AS}	9	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. High Temperature Solder Exemption Applied, see EU Directive Annex 7(a)-I.
3. The value of R_{θJA} is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.
4. Repetitive rating; pulse width limited by max. junction temperature.
5. P_D is based on max. junction temperature, using junction-ambient thermal resistance.
6. V_{DD}=50V, R_G=25Ω, V_G=10V, L=0.5mH.

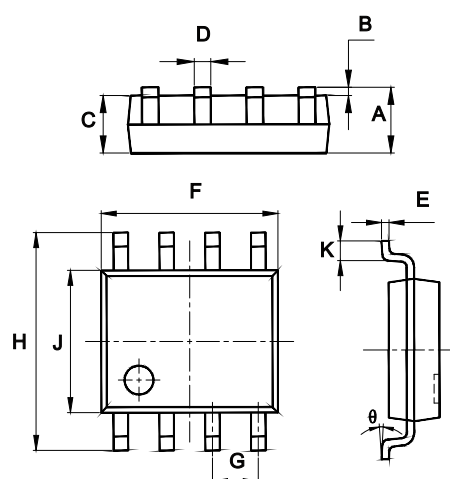
Internal Structure and Marking Code



YYWW: 4 codes in total
YY is the year
WW is the week

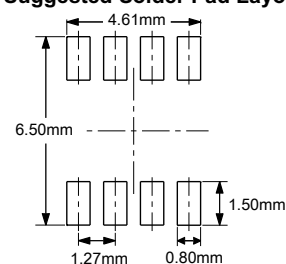
N-CHANNEL MOSFET

SOP-8



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.053	0.069	1.35	1.75	
B	0.004	0.010	0.10	0.25	
C	0.053	0.061	1.35	1.55	
D	0.013	0.020	0.33	0.51	
E	0.007	0.010	0.17	0.25	
F	0.185	0.200	4.70	5.10	
G	0.050		1.270		TYP.
H	0.228	0.244	5.80	6.20	
J	0.150	0.157	3.80	4.00	
K	0.016	0.050	0.40	1.27	
θ	0°	8°	0°	8°	

Suggested Solder Pad Layout



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	1.8	2.5	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =2A		78	105	mΩ
		V _{GS} =4.5V, I _D =2A		85	115	
Gate Resistance	R _g	f=1 MHz, Open drain		1.7		Ω
Diode Characteristics						
Continuous Body Diode Current	I _S				2.7	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =2A			1.2	V
Reverse Recovery Time	t _{rr}	I _F =2A, dI _F /dt=100A/μs		22		ns
Reverse Recovery Charge	Q _{rr}			27		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, f=1MHz		925		pF
Output Capacitance	C _{oss}			31		
Reverse Transfer Capacitance	C _{rss}			28		
Total Gate Charge	Q _g	V _{DS} =50V, V _{GS} =10V, I _D =2A		23.6		nC
Gate-Source Charge	Q _{gs}			2.6		
Gate-Drain Charge	Q _{gd}			6.0		
Turn-On Delay Time	t _{d(on)}	V _{DD} =50V, V _{GS} =10V, I _D =2A, R _G =3Ω		8.0		ns
Turn-On Rise Time	t _r			3.4		
Turn-Off Delay Time	t _{d(off)}			30		
Turn-Off Fall Time	t _f			4.2		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

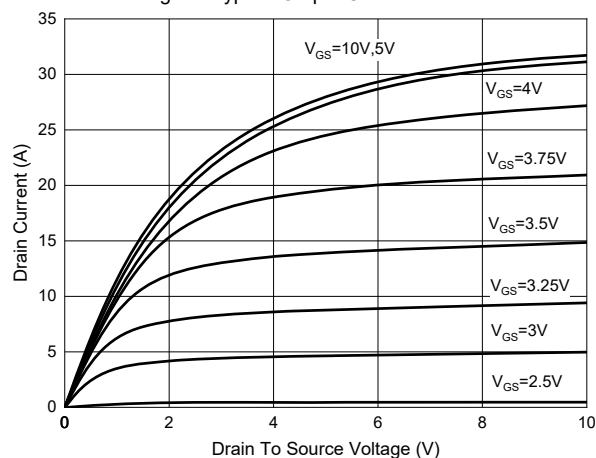


Fig. 2 - Transfer Characteristics

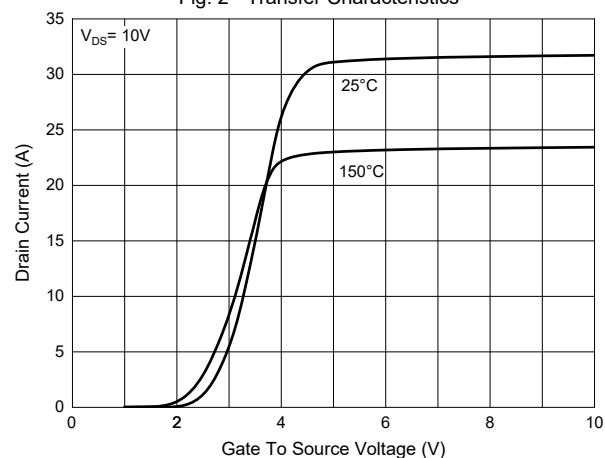


Fig.3- $R_{DS(ON)}$ - V_{GS}

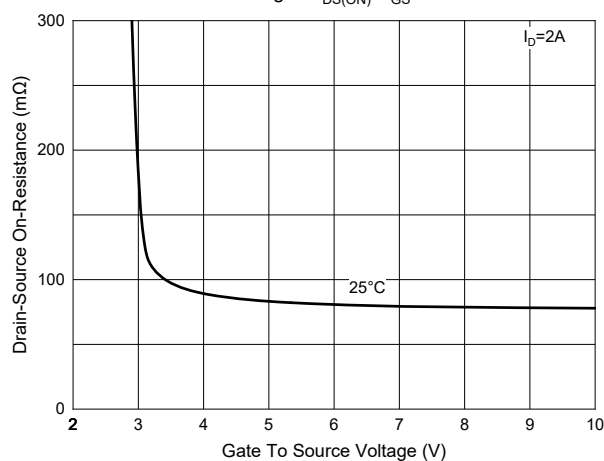


Fig.4- $R_{DS(ON)}$ - I_D

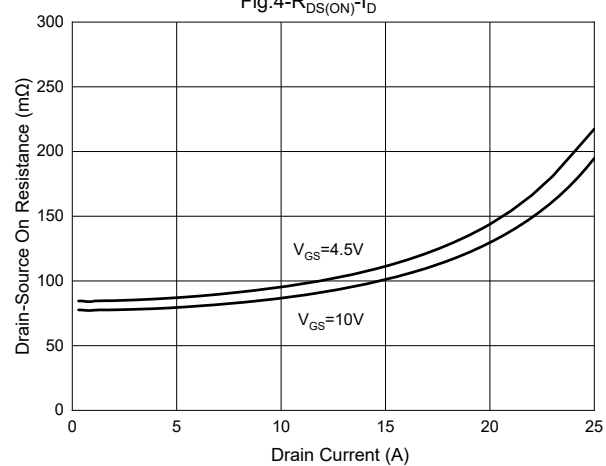


Fig. 5 - Capacitance Characteristics

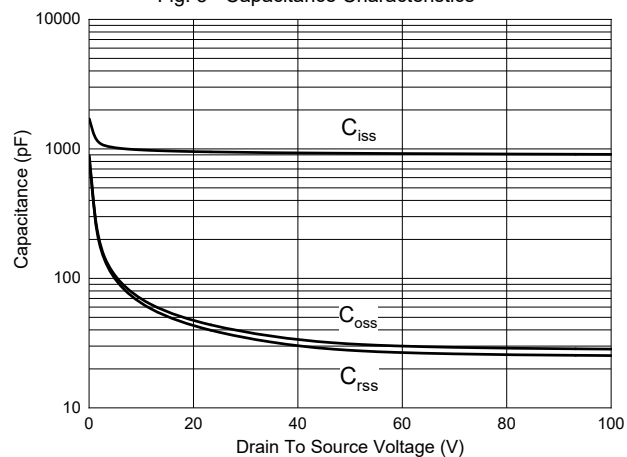
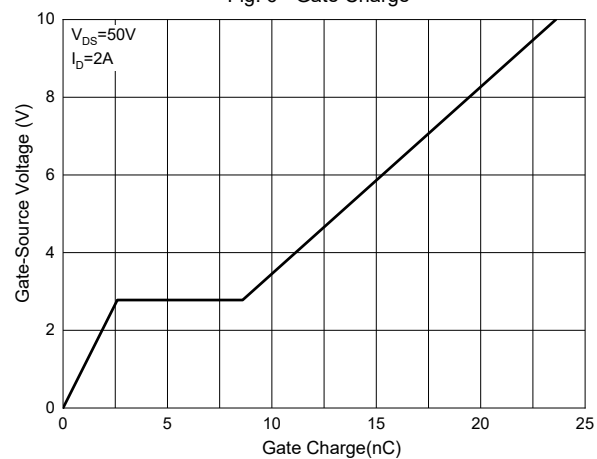


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Normalized Threshold Voltage

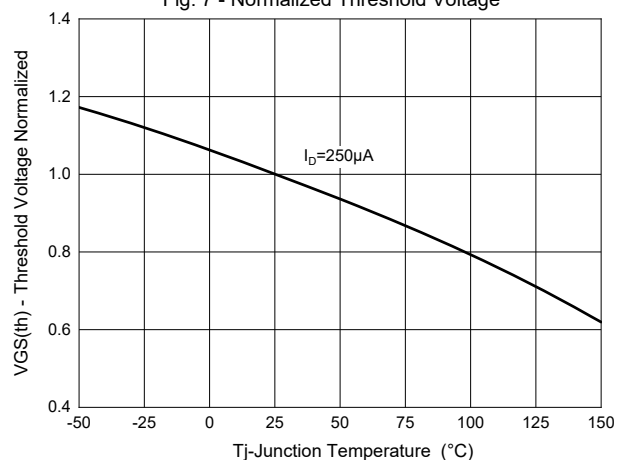


Fig. 8 - Normalized On Resistance Characteristics

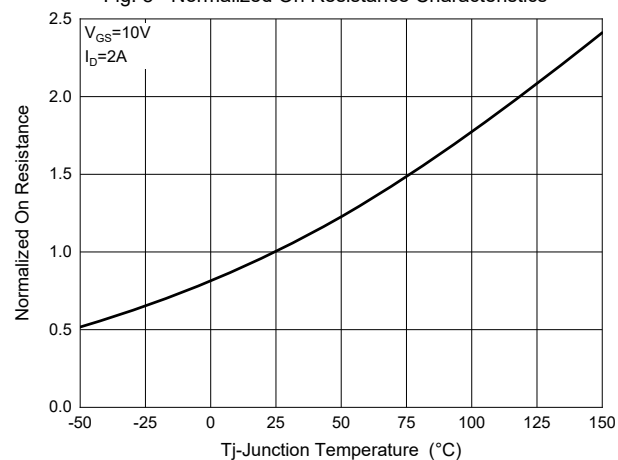


Fig.9- I_S - V_{SD}

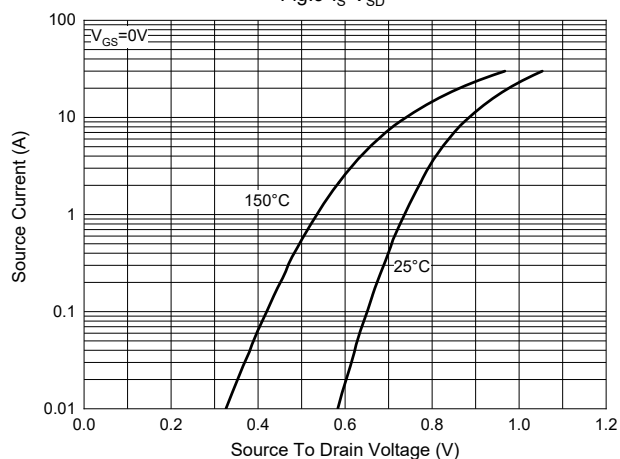


Fig. 10 - Drain Current

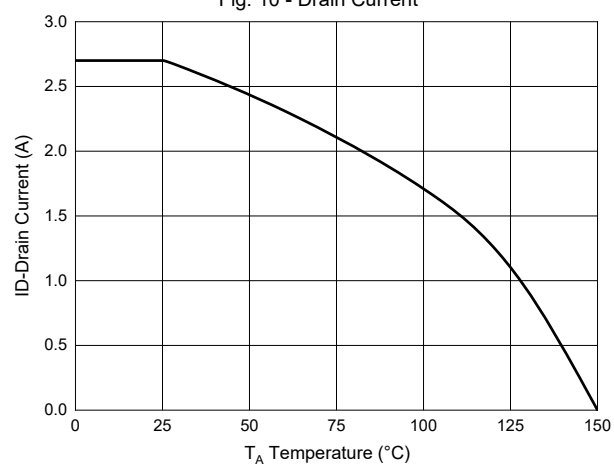
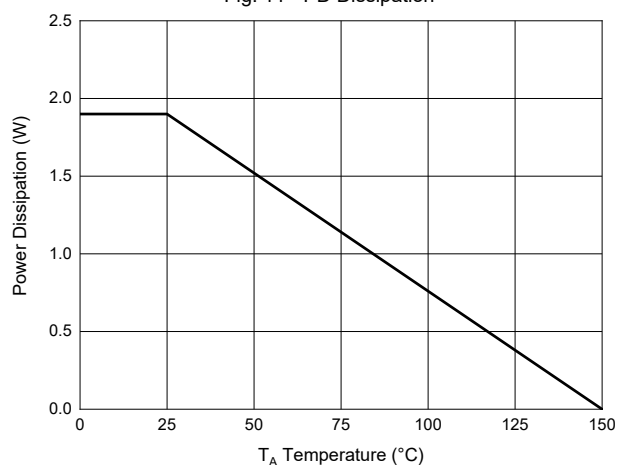


Fig. 11 - PD Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

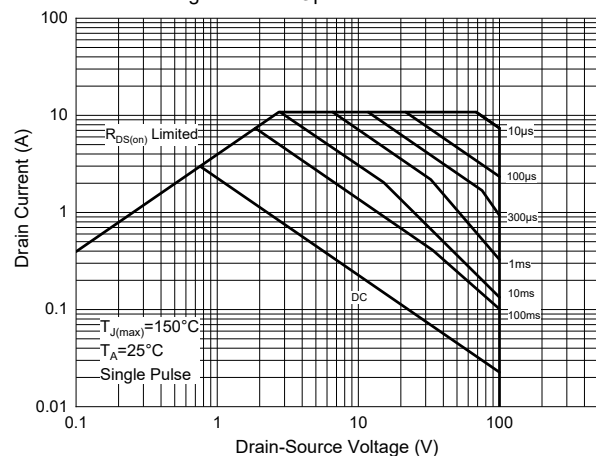
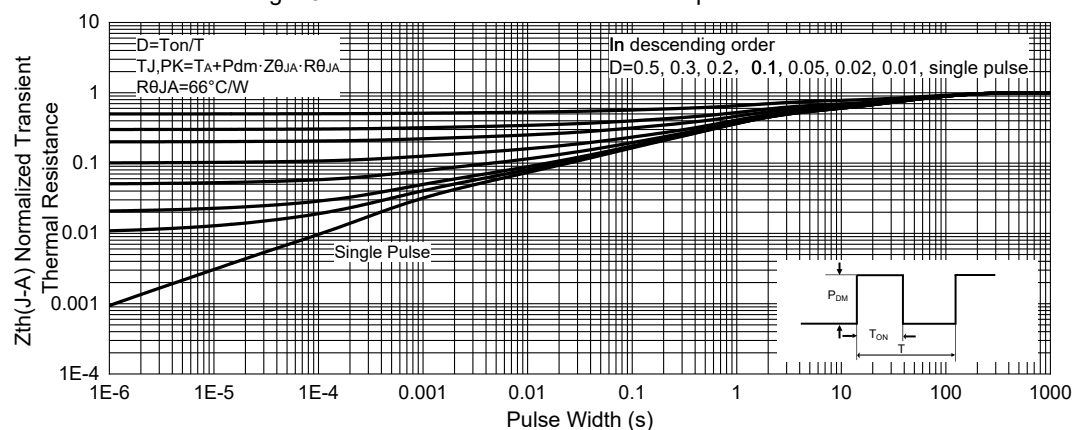


Fig. 13 - Normalized Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 4Kpcs/Reel

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