

Features

- Trench MOSFET Technology
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device^(Note 1)
- Moisture Sensitivity Level 3

Maximum Ratings

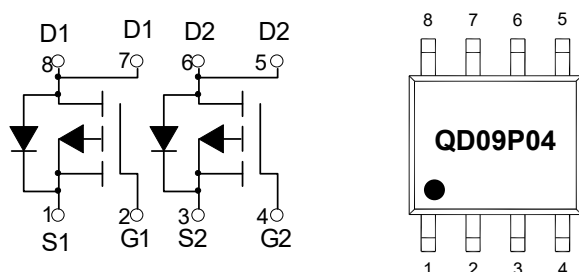
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 73°C/W Junction to Ambient^(Note 2)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	-40	V
Gate-Source Voltlage		V _{GS}	±20	V
Continuous Drain Current	T _C =25°C	I _D	-9	A
	T _C =100°C		-5.7	
Pulsed Drain Current ^{†(Note3)}		I _{DM}	-36	A
Total Power Dissipation ^(Note4)		P _D	1.7	W
Single Pulsed Avalanche Energy ^(Note5)		E _{AS}	64	mJ

Note:

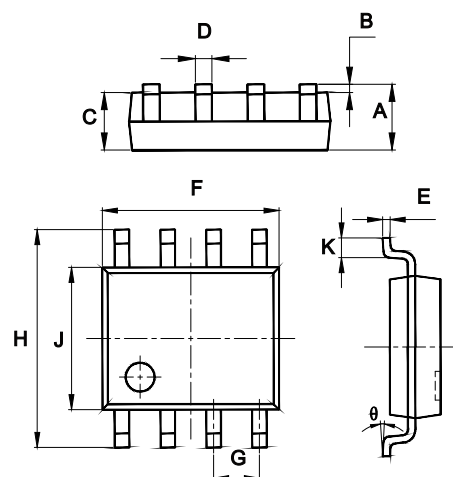
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ\text{C}$. The Power dissipation P_{DSM} is based on $R_{\theta JA} \leq 10$ s and the maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design.
3. Pulse Test: Pulse Width ≤ 300us, Duty cycle ≤ 2%.
4. P_D is based on max. junction temperature, using junction-ambient thermal resistance.
5. $T_J=25^\circ\text{C}$, $V_{DD}=-25\text{V}$, $L=0.5\text{mH}$

Internal Structure and Marking Code



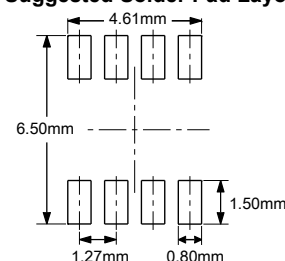
Dual P-Channel Power MOSFET

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	-40			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-40V, V _{GS} =0V			-1	μA
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1.0	-1.5	-2.5	V
Drain-Source On-Resistance ^(Note 3)	R _{DS(on)}	V _{GS} =-10V, I _D =-9A		17	23	mΩ
		V _{GS} =-4.5V, I _D =-5A		21	28	
Gate Resistance	R _g	F=1 MHz, Open drain		10		Ω
Diode Characteristics						
Continuous Body Diode Current	I _S				-9	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-9A			-1.2	V
Reverse Recovery Time	t _{rr}	I _F =-4A, dI _F /dt=100A/μs			51	ns
Reverse Recovery Charge	Q _{rr}				41	nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-30V,V _{GS} =0V,f=1MHz		3302		pF
Output Capacitance	C _{oss}			224		
Reverse Transfer Capacitance	C _{rss}			198		
Total Gate Charge	Q _g	V _{DS} =-20V,V _{GS} =-10V,I _D =-4A		75		nC
Gate-Source Charge	Q _{gs}			8		
Gate-Drain Charge	Q _{gd}			15		
Turn-On Delay Time	t _{d(on)}	V _{DD} =-20V, V _{GS} =-10V, R _{GEN} =3Ω, I _{DS} =-4A		7.5		ns
Turn-On Rise Time	t _r			4.2		
Turn-Off Delay Time	t _{d(off)}			200		
Turn-Off Fall Time	t _f			70		

Fig. 1 - Typical Output Characteristics

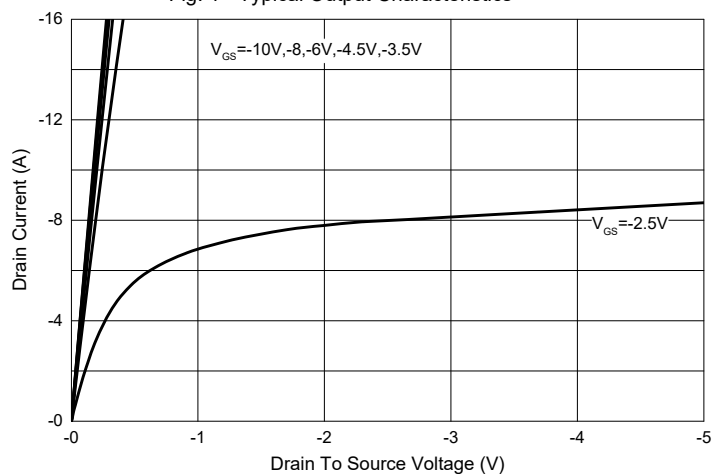


Fig. 2 - Transfer Characteristics

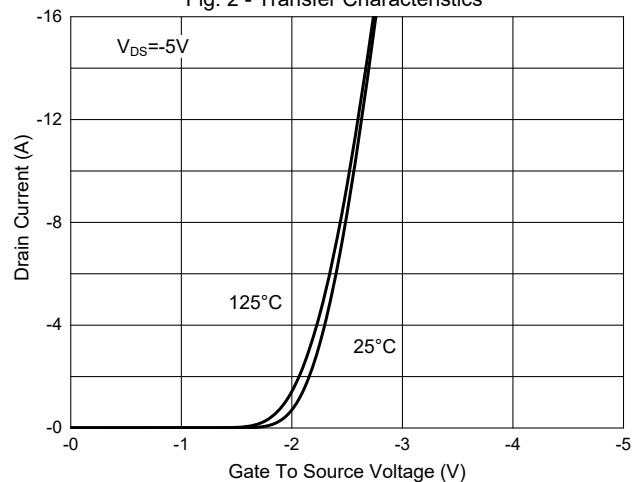


Fig. 3 - $R_{DS(ON)} - V_{GS}$

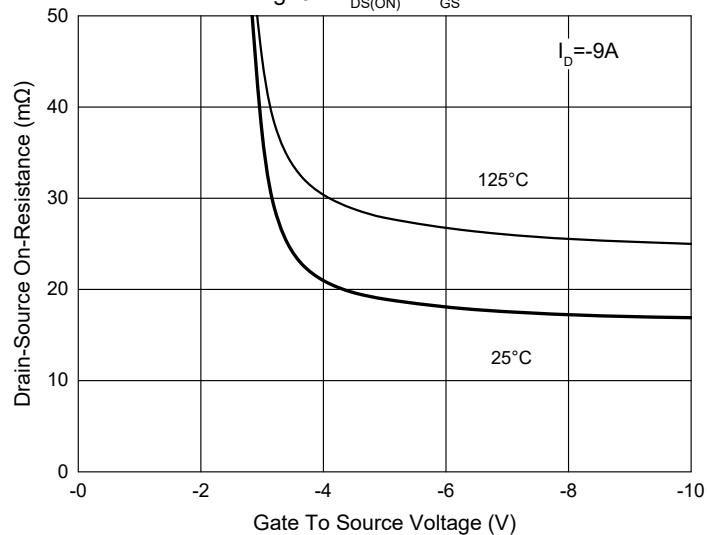


Fig. 4 - $R_{DS(ON)} - I_D$

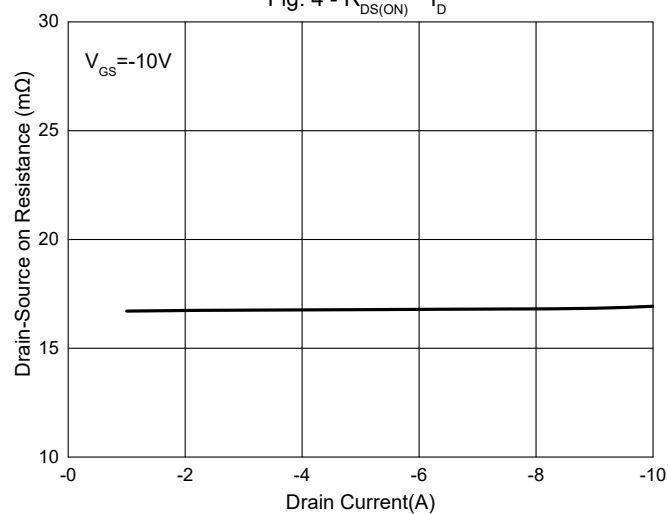


Fig. 5 - Normalized On Resistance Characteristics

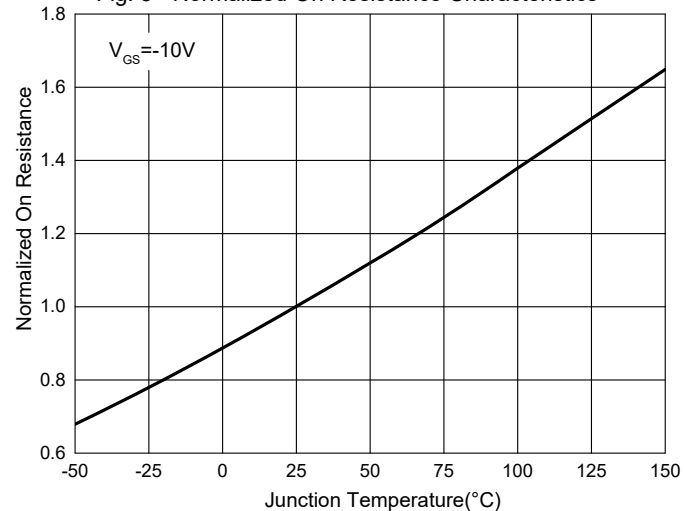


Fig. 6 - Threshold Voltage

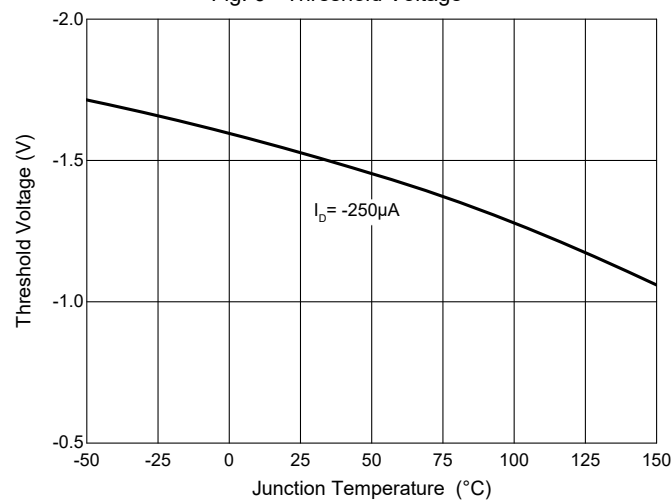


Fig. 7 - Capacitance Characteristics

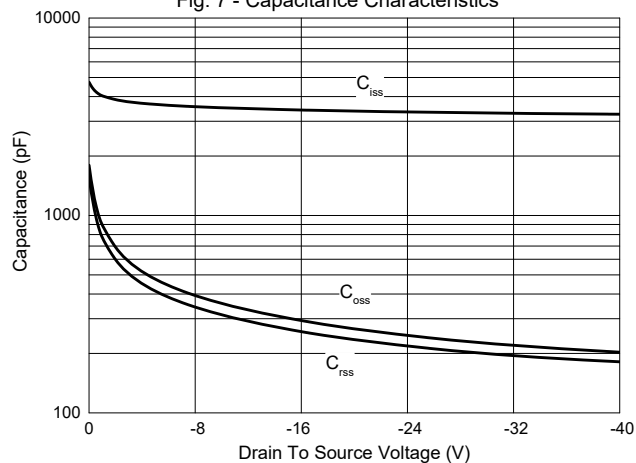


Fig. 8 - Gate Charge

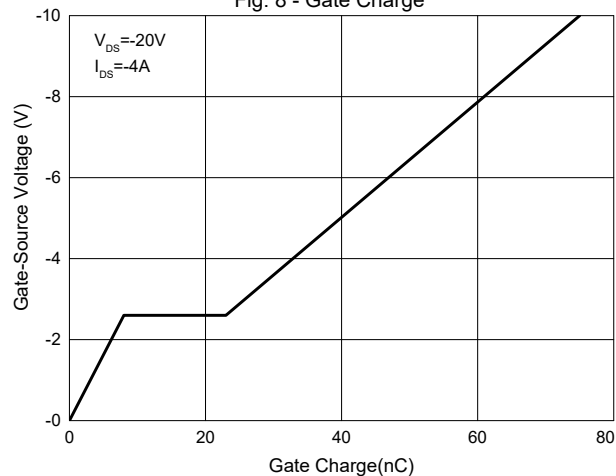


Fig. 9 - $I_S - V_{SD}$

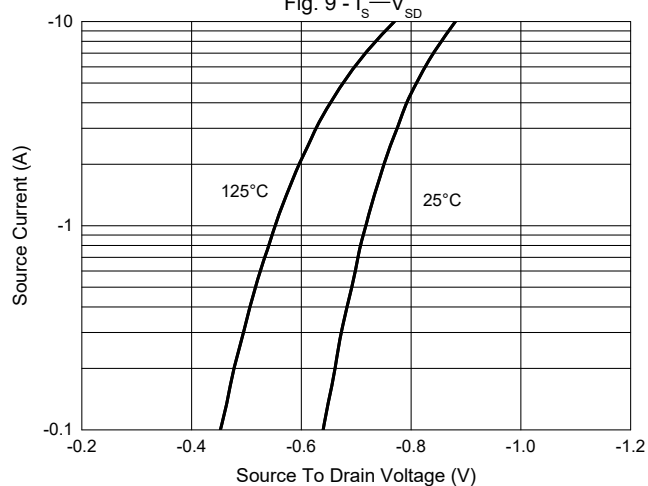


Fig. 10 - $I_D - T_J$

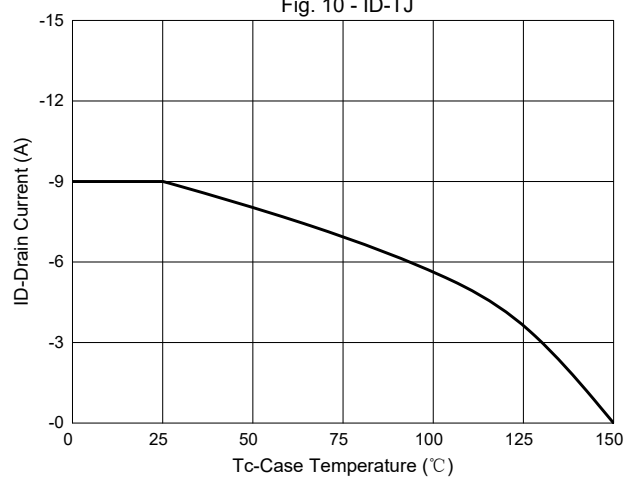


Fig. 11 - PD—TJ

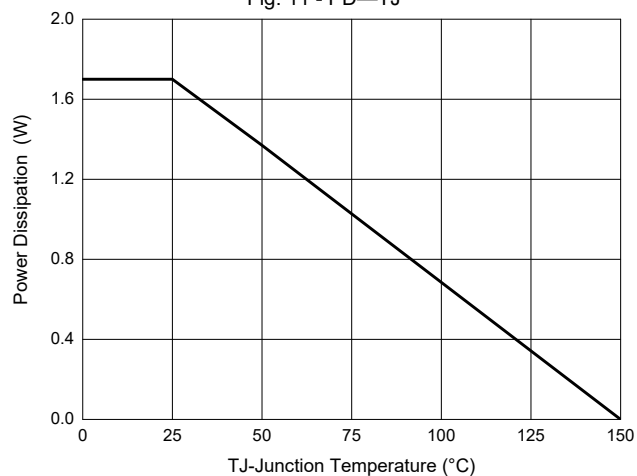


Fig. 12 - Safe Operation Area

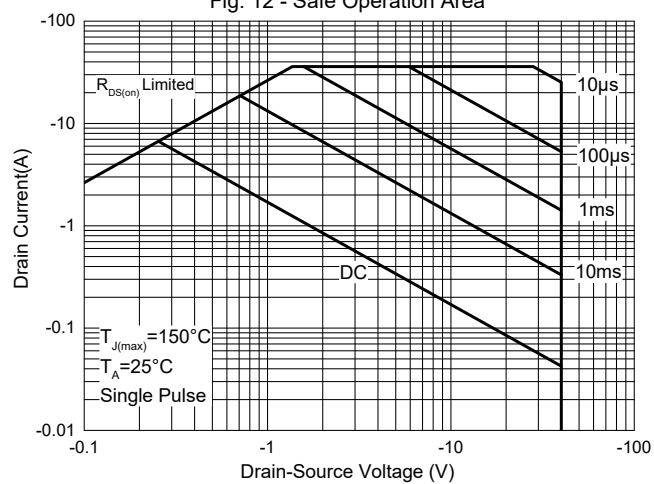
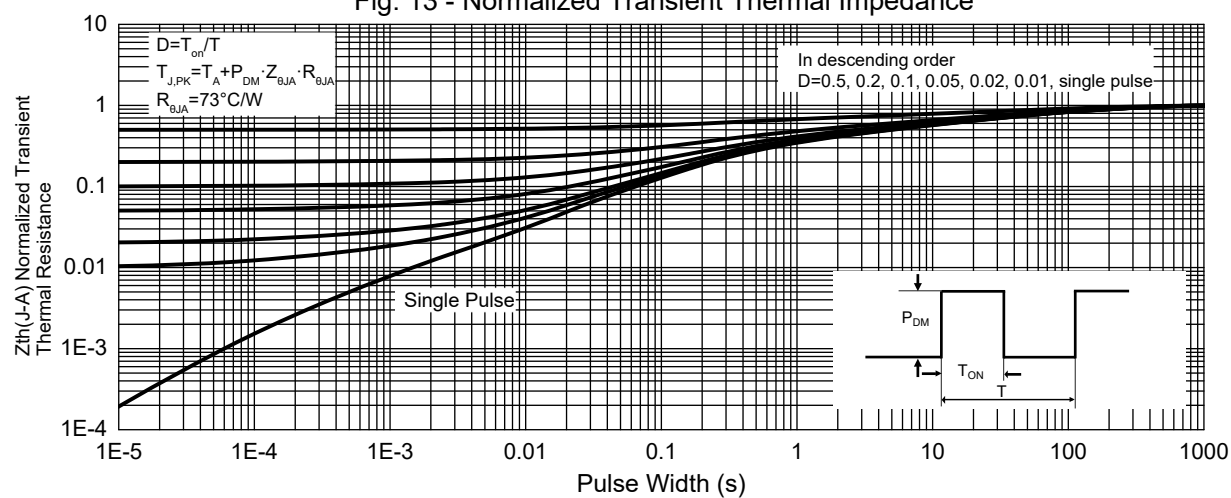


Fig. 13 - Normalized Transient Thermal Impedance



Ordering Information

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

Revision History

Datasheet status	Version No	Release date	Update content
New product datasheet	Rev4-1	20230109	

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