Features

- Trench Power LV MOSFET Technology
- High Density Cell Design for Low $R_{DS(on)}$
- High Speed Switching
- Halogen Free. “Green” Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Dual N-CHANNEL MOSFET

Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 53°C/W Junction to Ambient (Note 2)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Volltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25°C	I_D	8.5	A
	T_A=100°C		5.4	
Pulsed Drain Current (Note 3)		I_{DM}	34	A
Total Power Dissipation(Note 4)		P_D	2.35	W

Note:

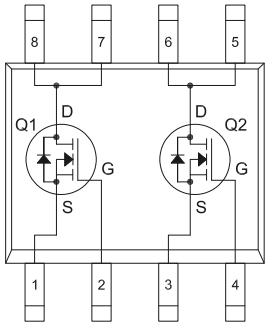
1.Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

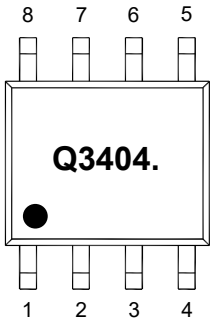
2.Device mounted on FR-4 PCB, 1in^2 FR-4 board with 2oz.

3.Pulse Test: Pulse Width≤300us,Duty cycle ≤2%.

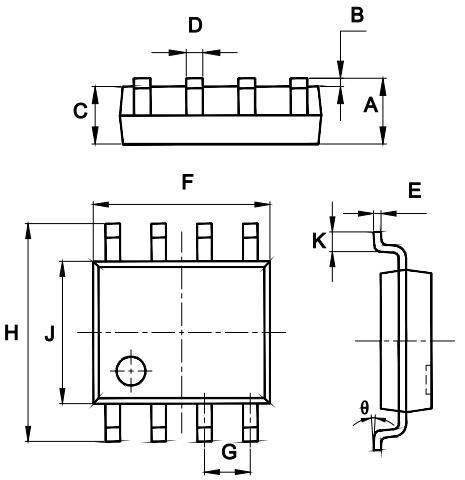
4.P_D is based on max. junction temperature,using junction-Ambient thermal resistance.

Internal Structure and Marking Code



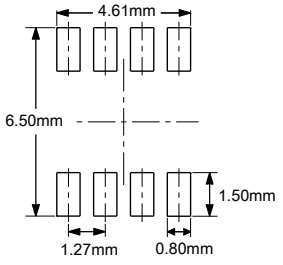


SOP-8



DIMENSIONS					
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	30			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±20V			±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	1.5	2.2	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=8.5A		18	23	mΩ
		V_{GS}=4.5V, I_D=6A		24	32	
Gate Resistance	R_G	F=1MHz, Open drain		2.3		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				8.5	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=8.5A		0.8	1.2	V
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=15V,V_{GS}=0V,f=1MHz		367		pF
Output Capacitance	C_{oss}			70		
Reverse Transfer Capacitance	C_{rss}			58		
Total Gate Charge	Q_g	V_{DS}=15V,V_{GS}=4.5V,I_D=8.5A		4.3		nC
Gate-Source Charge	Q_{gs}			1.1		
Gate-Drain Charge	Q_{gd}			2.1		
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=15V, V_{GS}=4.5V, R_G=2.8Ω, I_D=8.5A		6.8		ns
Turn-On Rise Time	t_r			11.5		
Turn-Off Delay Time	$t_{d(off)}$			10		
Turn-Off Fall Time	t_f			5.5		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

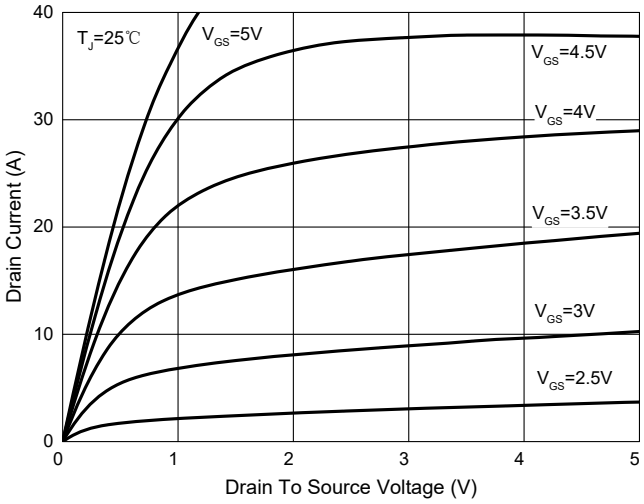


Fig. 2 - Transfer Characteristics

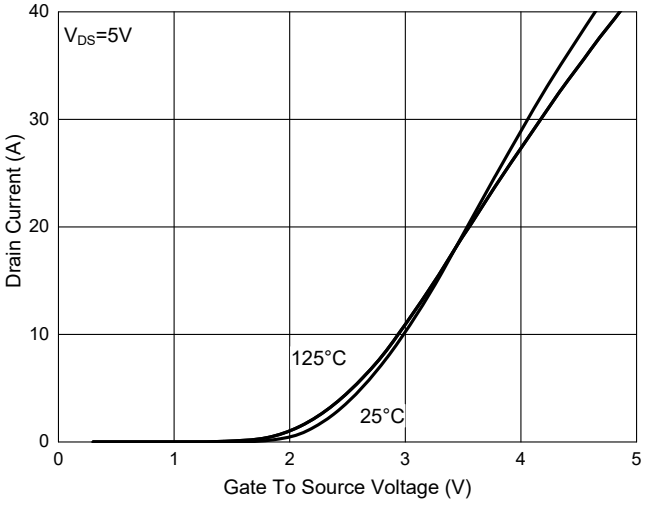


Fig. 3 - $R_{DS(ON)}$—I_D

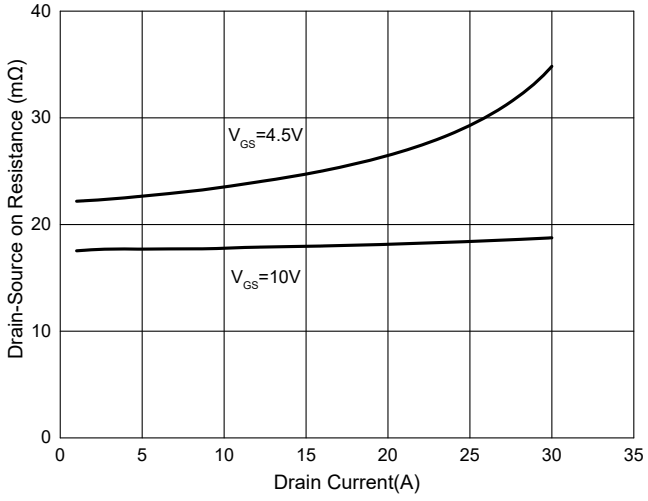


Fig. 4 - Normalized On Resistance Characteristics

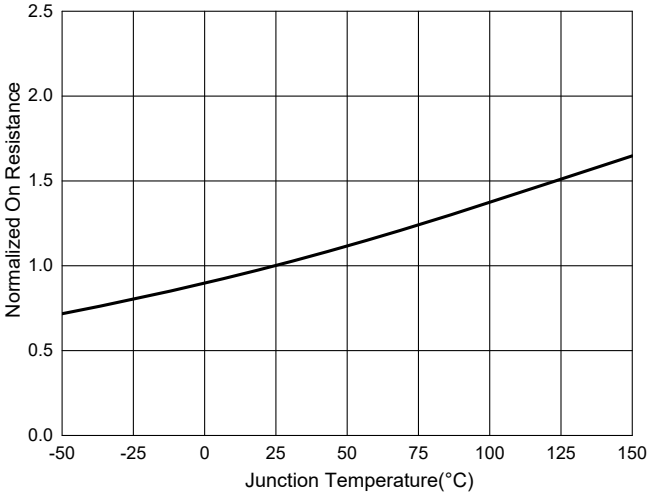


Fig. 5 - Capacitance Characteristics

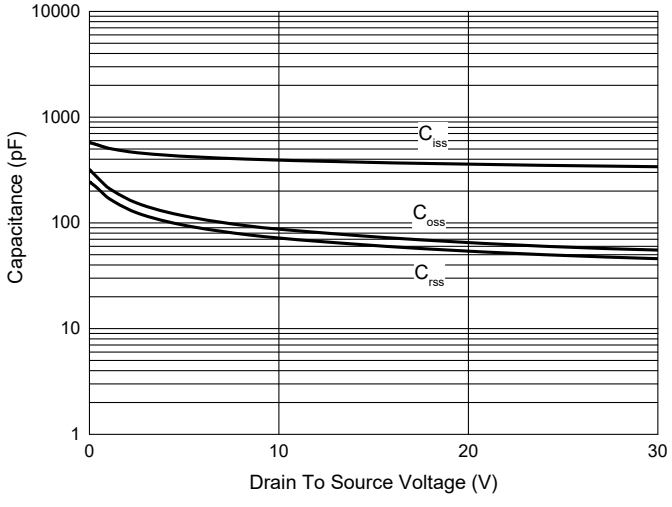
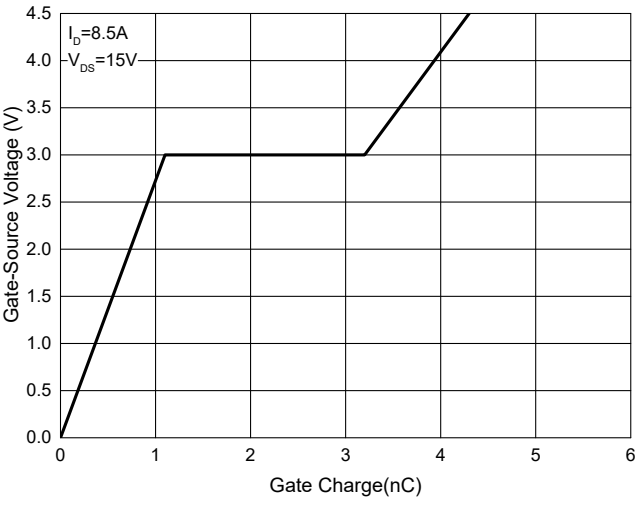


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - $R_{DS(ON)}$—V_{GS}

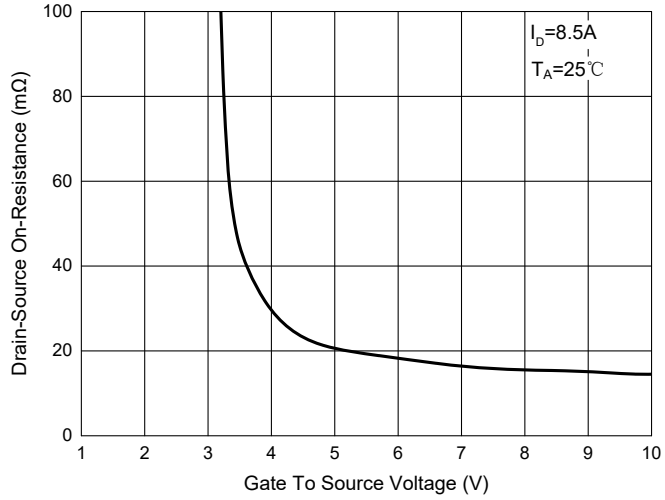


Fig. 8 - Nomalized Threshold voltage

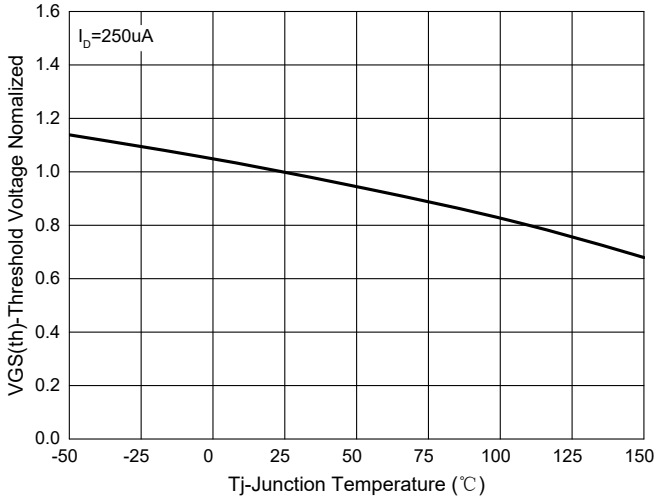


Fig. 9 - I_S—V_{SD}

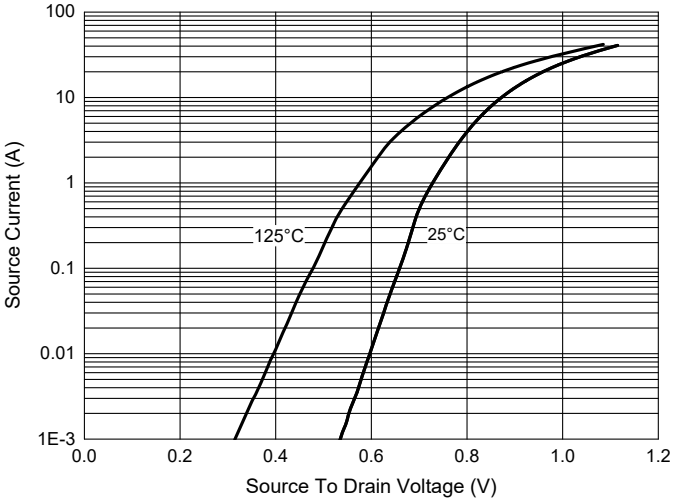


Fig. 10 - Current dissipation

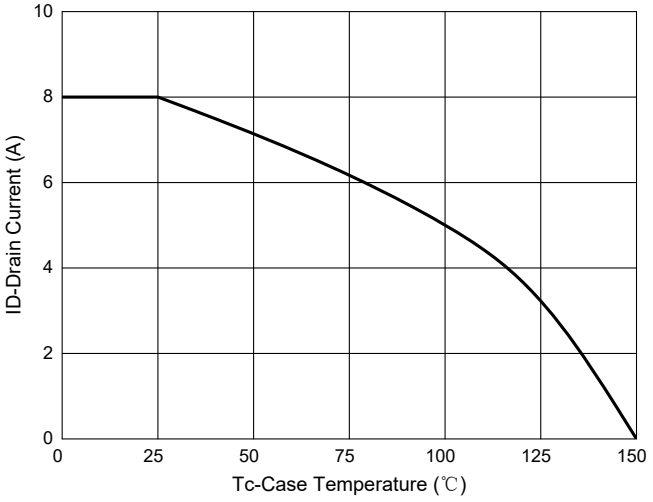
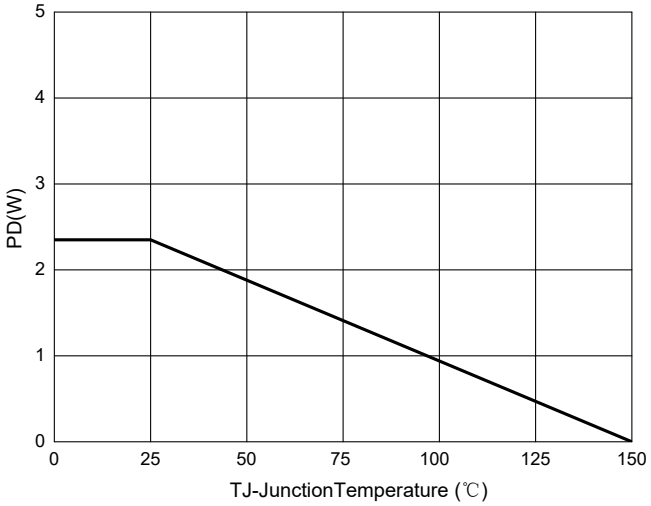


Fig. 11 - Power Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

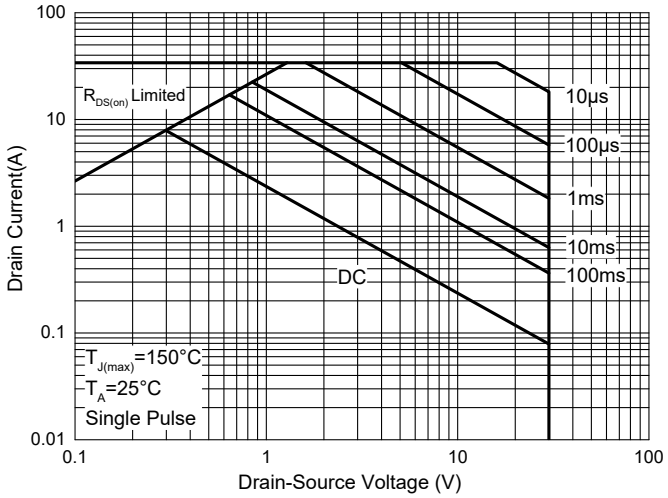
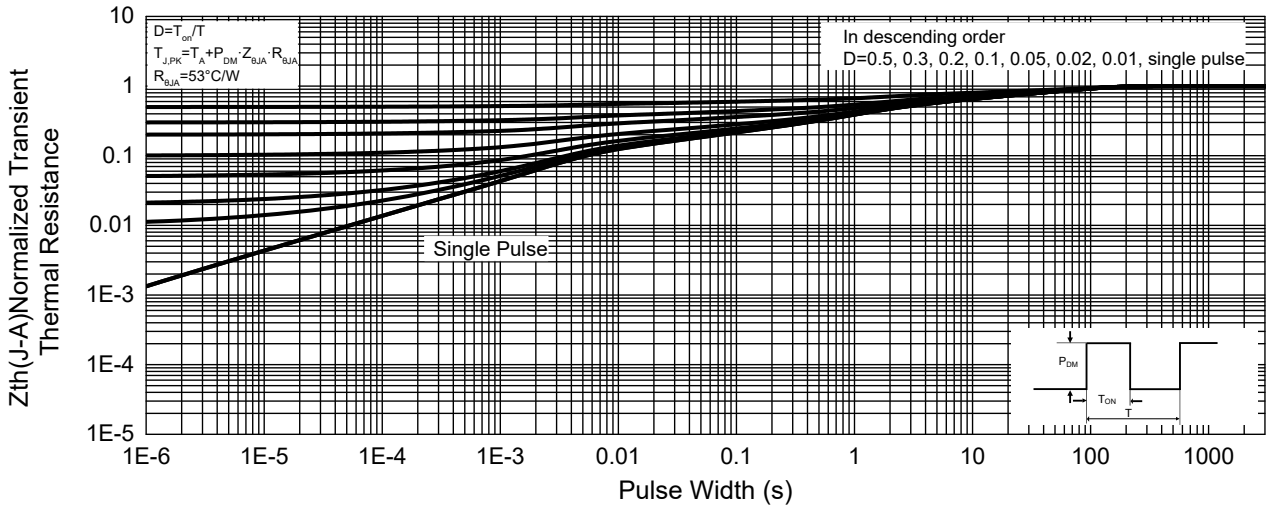


Fig. 13 - Normalized Transient Thermal Impedance



Ordering Information

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

Revision History

Datasheet status	Version No	Release date	Update content
New product datasheet	Rev4-1	20230104	