

Features

- Split Gate Trench MOSFET Technology
- Excellent Stability And Uniformity
- Moisture Sensitivity Level 3
- Halogen Free. "Green" Device^(Note1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

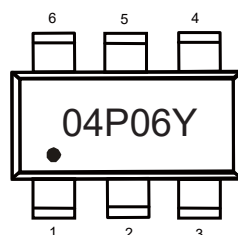
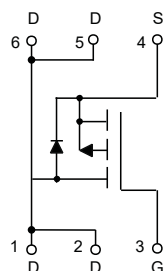
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 80°C/W Junction to Ambient^(Note2)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	$T_A=25^{\circ}\text{C}$	I_D	A
	$T_A=100^{\circ}\text{C}$		
Pulsed Drain Current ^(Note3)	I_{DM}	-14	A
Total Power Dissipation ^(Note4)	P_D	1.56	W

Note:

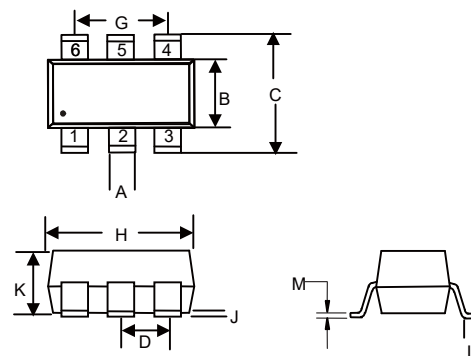
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The Value of $R_{\theta JA}$ is Measured with the Device Mounted on 1in2 FR-4 Board with 1oz. Copper, in a Still Air Environment with $T_A=25^{\circ}\text{C}$.
3. Repetitive rating; pulse width limited by max. junction temperature.
4. P_D is based on max. junction temperature, using junction-ambient thermal resistance.

Internal Structure and Marking Code



P-Channel MOSFET

SOT23-6L



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.012	0.020	0.30	0.50	
B	0.051	0.070	1.30	1.80	
C	0.087	0.126	2.20	3.20	
D	0.037		0.95		TYP.
G	0.074		1.90		TYP.
H	0.106	0.122	2.70	3.10	
J	0.002	0.006	0.05	0.15	
K	0.030	0.051	0.75	1.30	
L	0.012	0.024	0.30	0.60	
M	0.003	0.008	0.08	0.22	

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			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
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1.0	-1.8	-2.5	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-4A		69	85	mΩ
		V _{GS} =-4.5V, I _D =-2A		90	120	
Gate Resistance	R _g	f=1 MHz, Open drain		3		Ω
Diode Characteristics						
Continuous Body Diode Current	I _S				-3.5	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-3.5A			-1.2	V
Reverse Recovery Time	t _{rr}	I _F =-4A, di _F /dt=100A/μs		20		ns
Reverse Recovery Charge	Q _{rr}			15		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, f=1MHz		513		pF
Output Capacitance	C _{oss}			130		
Reverse Transfer Capacitance	C _{rss}			23		
Total Gate Charge	Q _g	V _{DD} =-30V, V _{GS} =-4.5V, I _D =-3.1A		4.27		nC
Gate-Source Charge	Q _{gs}			2.39		
Gate-Drain Charge	Q _{gd}			1.1		
Turn-On Delay Time	t _{d(on)}	V _{DD} =-30V, V _{GS} =-4.5V I _D =-2.4A, R _G =1Ω		11		ns
Turn-On Rise Time	t _r			33.8		
Turn-Off Delay Time	t _{d(off)}			12.4		
Turn-Off Fall Time	t _f			23.2		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

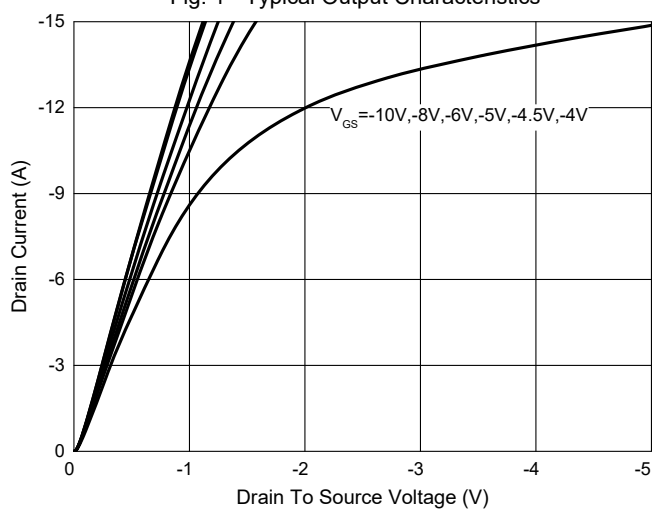


Fig. 2 - Transfer Characteristics

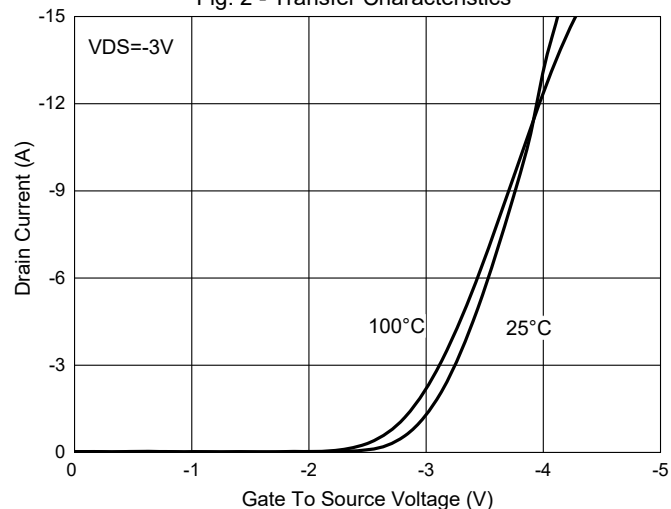


Fig. 3 - $R_{DS(ON)} - V_{GS}$

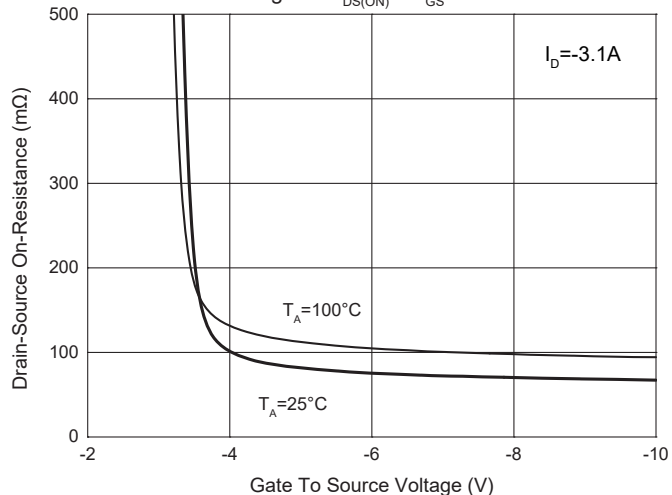


Fig. 4 - $R_{DS(ON)} - I_D$

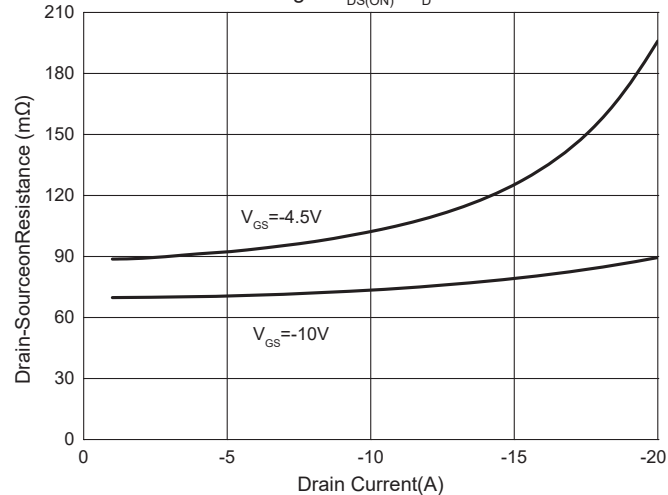


Fig. 5 - Capacitance Characteristics

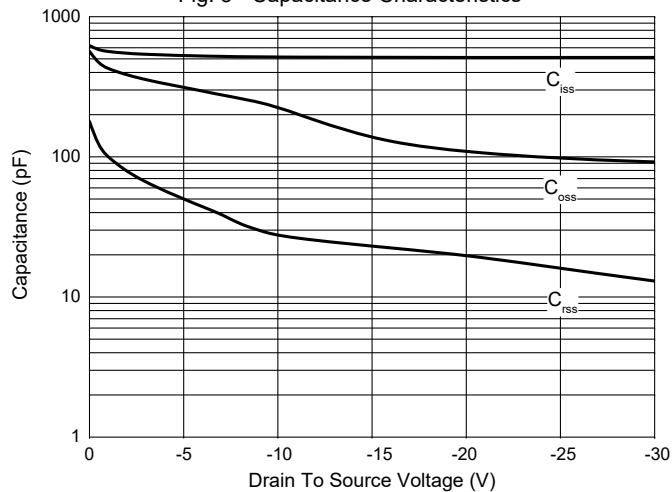
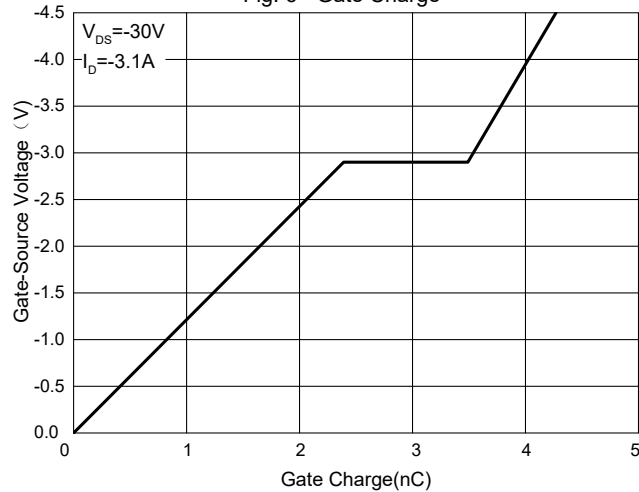


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Normalized Threshold Voltage

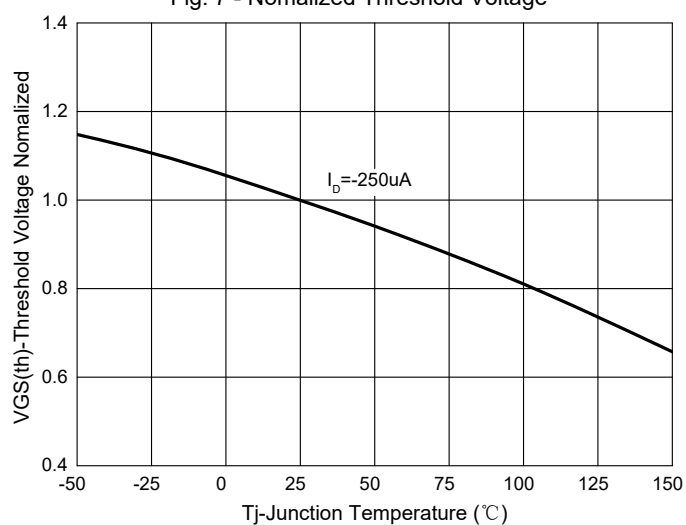


Fig.8-Normalized On Resistance Characteristics

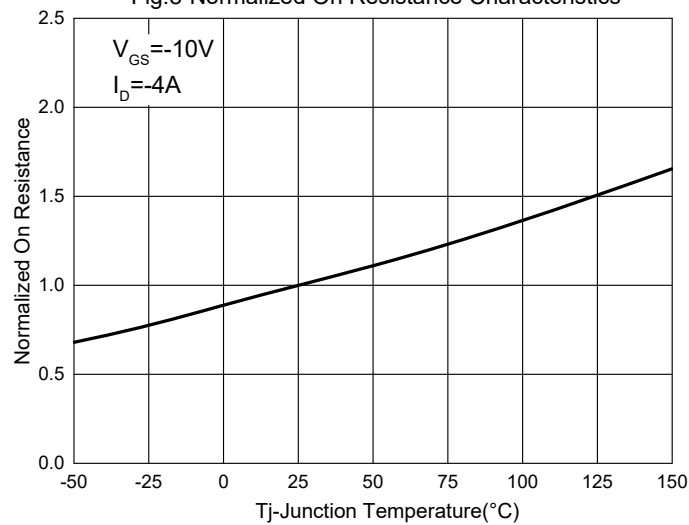


Fig. 9 - I_S—V_{SD}

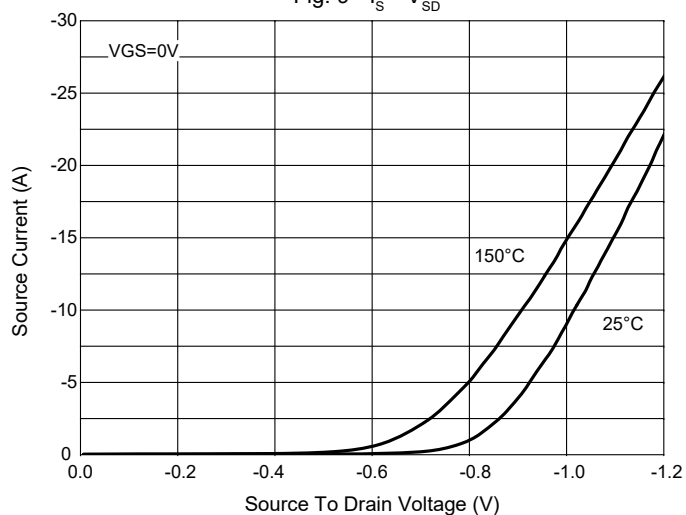


Fig. 10 - Drain Current

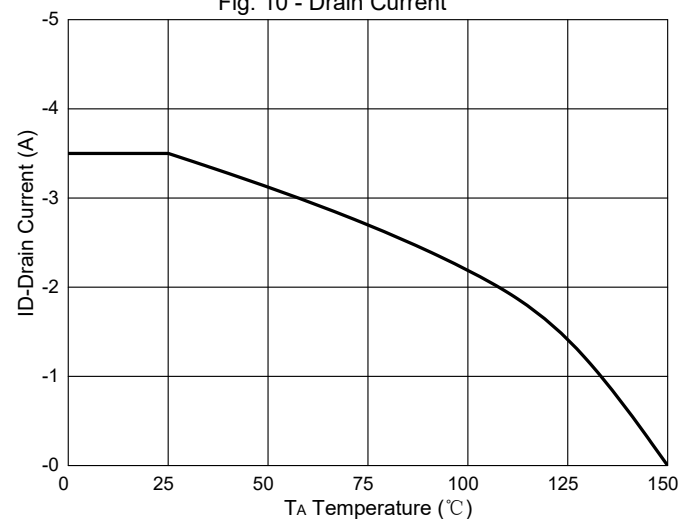
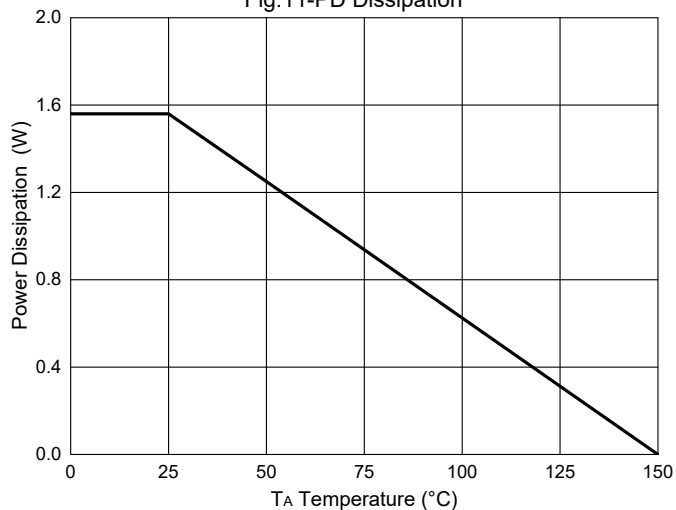


Fig.11-PD Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

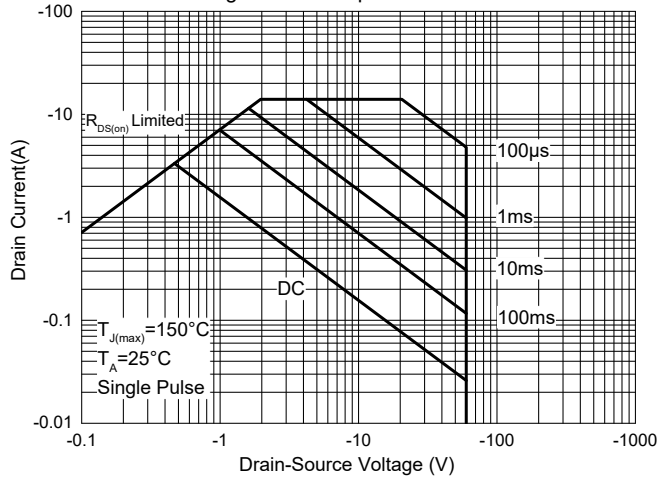
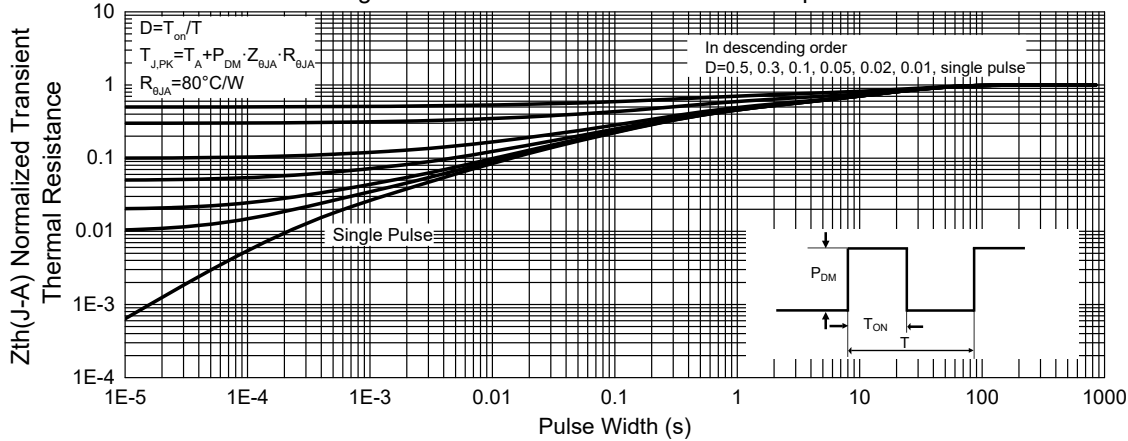


Fig. 13 - Normalized Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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