

### Features

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

### Maximum Ratings

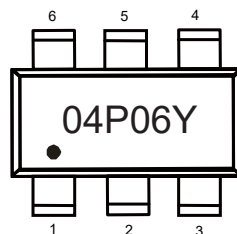
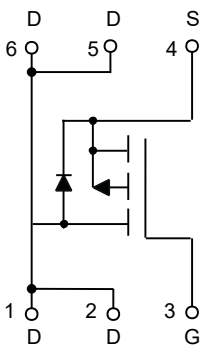
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 80°C/W Junction to Ambient<sup>(Note 1)</sup>

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-60	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	-3.5	A
Pulsed Drain Current <sup>(Note 2)</sup>	$I_{DM}$	-14	A
Total Power Dissipation	$P_D$	1.56	W

Notes: 1. Surface Mounted on 1inch square FR-4 board with 1oz. Copper.

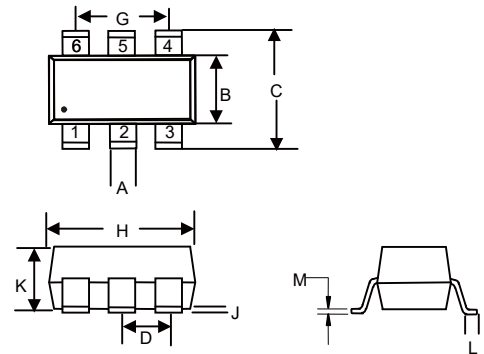
2. Pulse Test : Pulse Width ≤ 300µs, Duty Cycle ≤ 2%.

### Internal Structure and Marking Code



## P-Channel MOSFET

### SOT23-6L



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-60			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-60V, V_{GS}=0V$			-1	$\mu A$
Gate-Threshold Voltage <sup>(Note 2)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.8	-2.5	V
Drain-Source On-Resistance <sup>(Note 2)</sup>	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-4A$		69	85	m $\Omega$
		$V_{GS}=-4.5V, I_D=-2A$		90	120	
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=-3.5A$			-1.2	V
Body-Diode Continuous Current	$I_S$				-3.5	A
<b>Dynamic Characteristics<sup>(Note 3)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$		505		pF
Output Capacitance	$C_{oss}$			133		
Reverse Transfer Capacitance	$C_{rss}$			23		
<b>Switching Characteristics<sup>(Note 3)</sup></b>						
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	$t_{d(on)}$	$V_{DD}=-30V, V_{GEN}=-4.5V, I_D=-2.4A, R_G=1\Omega$		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		

Note3. Guaranteed by Design, Not Subject to Production Testing.

**Curve Characteristics**

Fig. 1 - Typical Output Characteristics

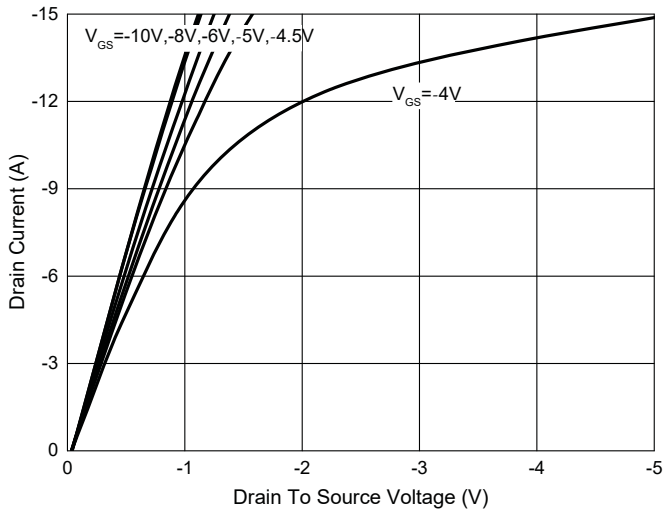


Fig. 2 - Transfer Characteristics

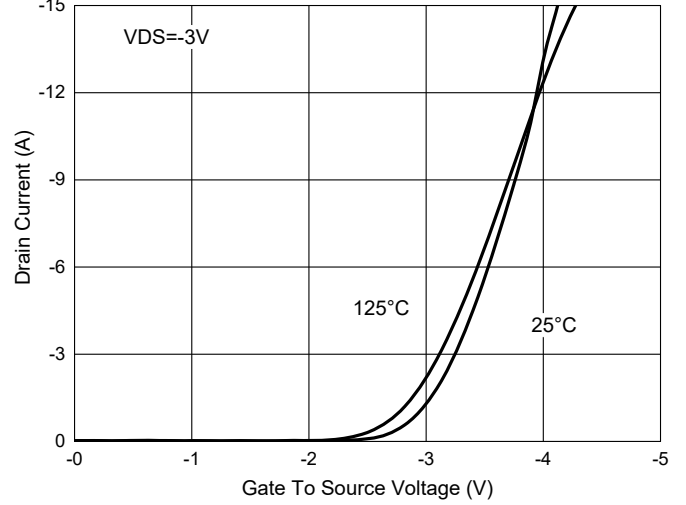


Fig. 3 -  $R_{DS(ON)} - I_D$

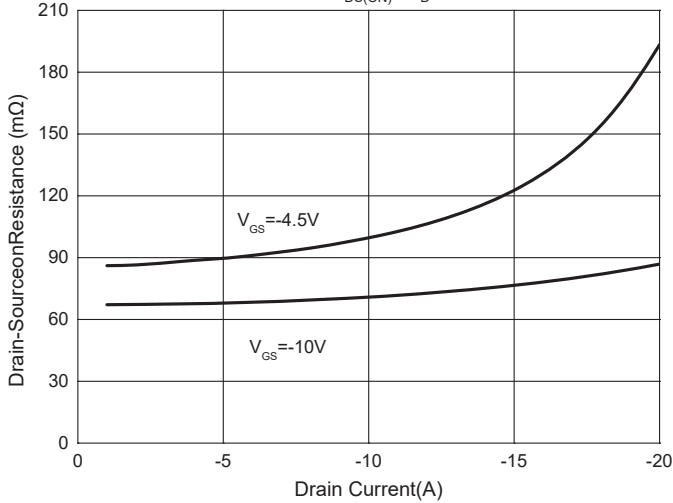


Fig. 4 -  $R_{DS(ON)} - V_{GS}$

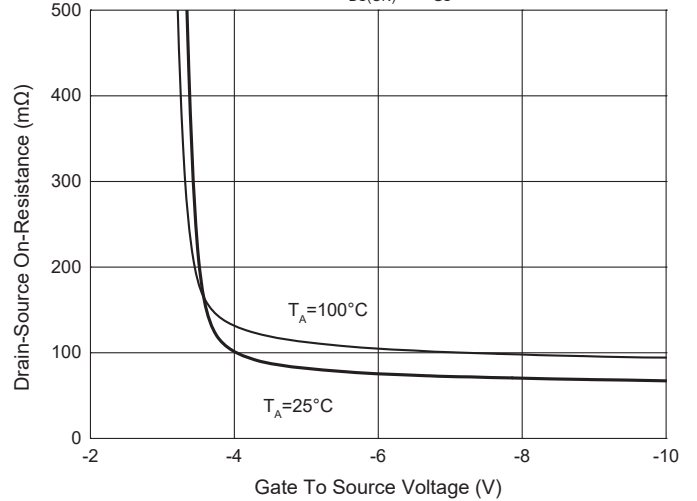


Fig. 5 - Gate Charge

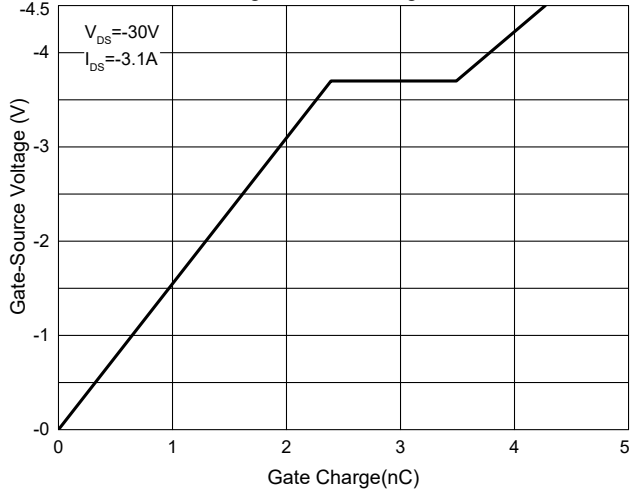
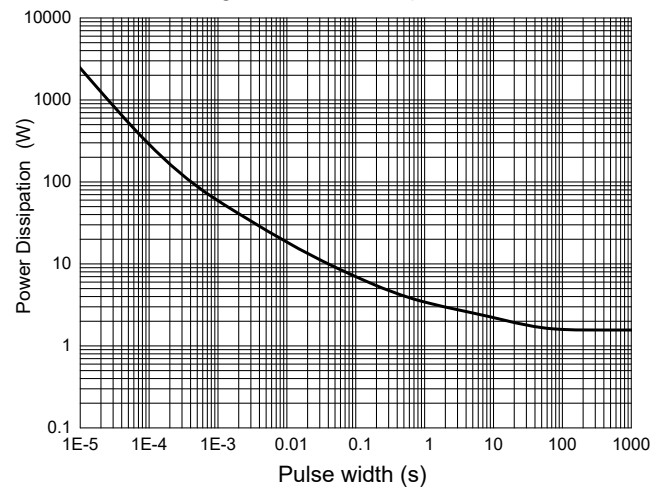


Fig. 6 - Power Dissipation



Curve Characteristics

Fig. 7 - Power dissipation - Tj

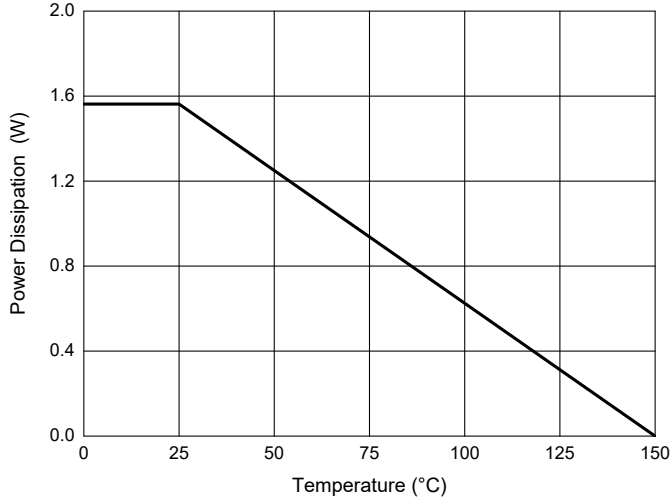


Fig. 8 - Capacitance Characteristics

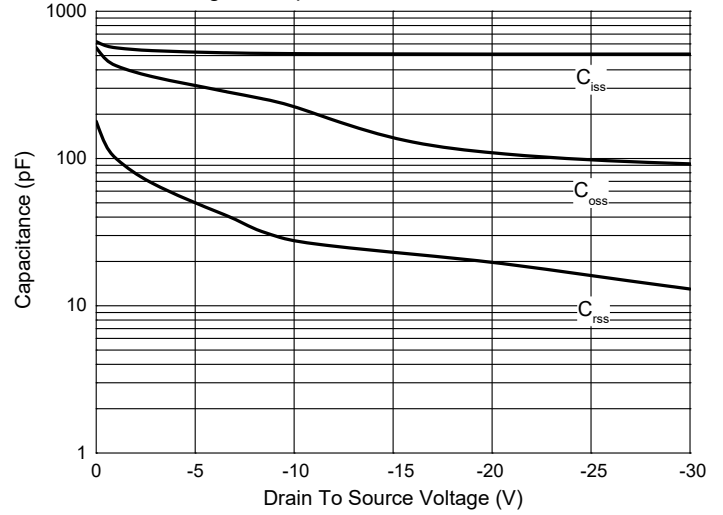


Fig. 9 - I<sub>s</sub> - V<sub>SD</sub>

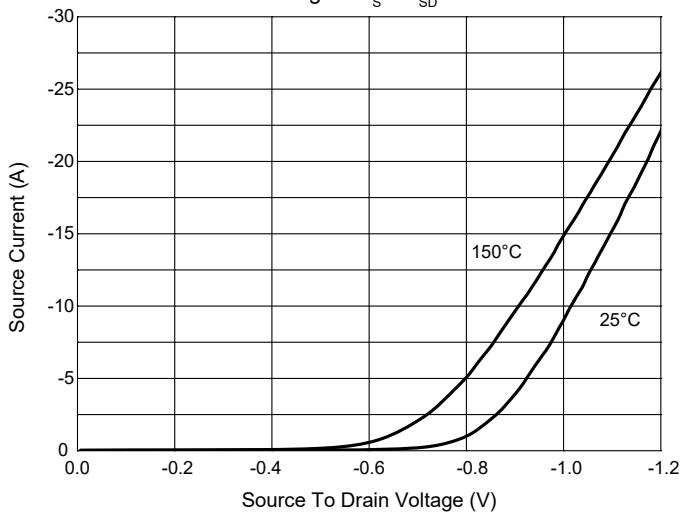


Fig.10-Normalized On Resistance Characteristics

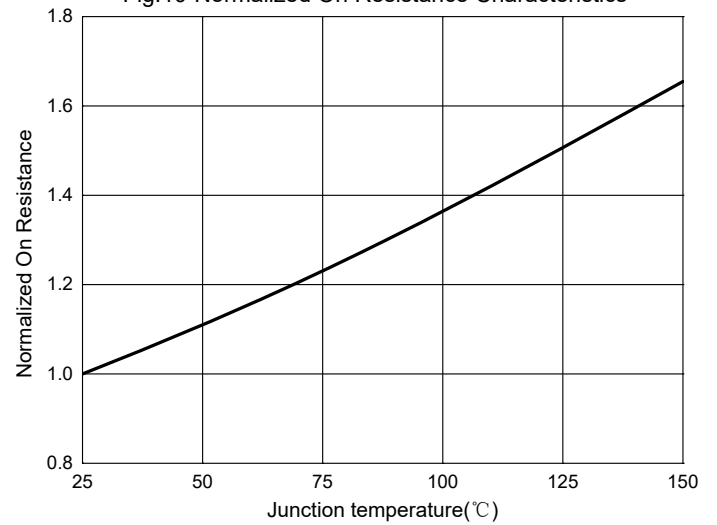
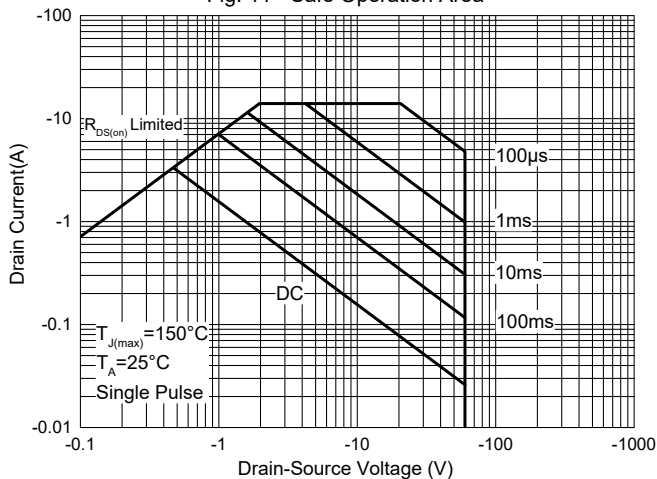
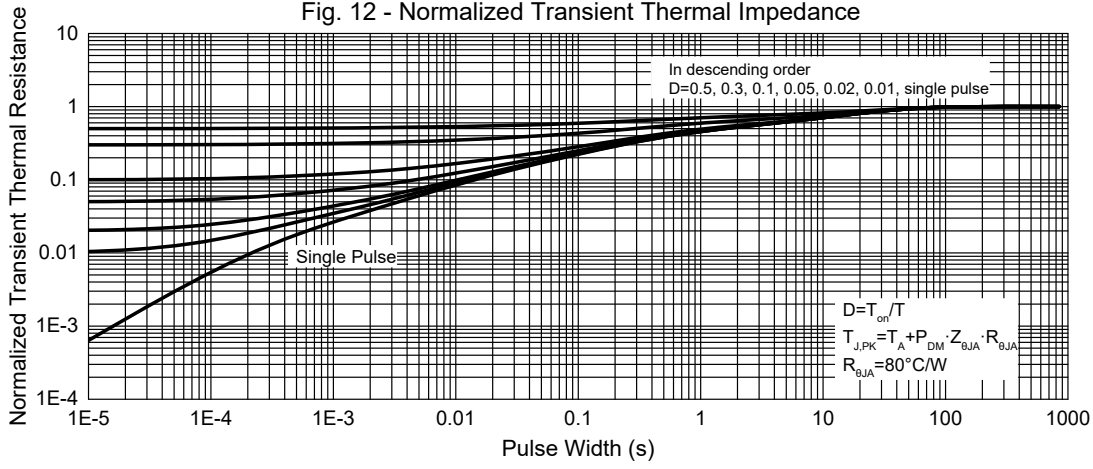


Fig. 11 - Safe Operation Area



Curve Characteristics

Fig. 12 - Normalized Transient Thermal Impedance



## Ordering Information

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

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