

## Features

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

## Maximum Ratings

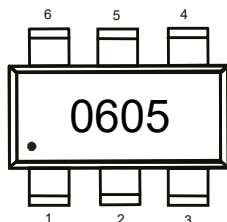
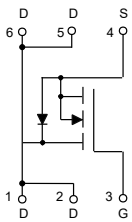
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 100°C/W Junction to Ambient (Note2)

Parameter	Symbol	Rating	Unit
Drain -Source Voltage	$V_{DS}$	60	V
Gate -Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current-Continuous	$I_D$	5	A
Pulsed Drain Current (Note3)	$I_{DM}$	20	A
Power Dissipation	$P_D$	1.25	W

### Note:

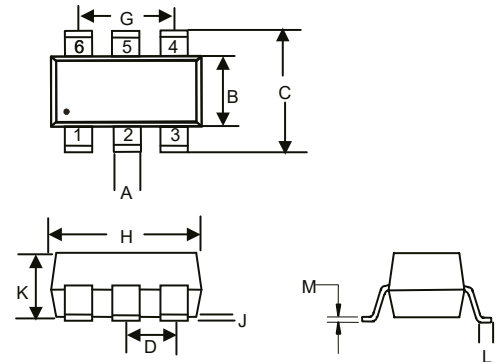
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Surface Mounted on FR4 Board,  $t \leq 10$  sec.
3. Pulse Width Limited by Maximum Junction Temperature.

## Internal Structure and Marking Code



# N-Channel Power 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 (Ta=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-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		2.5	V
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 60V, V_{GS} = 0V$			1	$\mu A$
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=5A$		34	43	m $\Omega$
		$V_{GS}= 4.5V, I_D=4A$		36	47	
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=30V, V_{GS}=0V, f=1MHz$		1018		pF
Output Capacitance	$C_{oss}$			70		
Reverse Transfer Capacitance	$C_{rss}$			62		
<b>Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DS}=30V, V_{GS}=10V, I_D=10A$		26.4		nC
Gate-Source Charge	$Q_{gs}$			5.4		
Gate-Drain Charge	$Q_{gd}$			6.5		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=30V, V_{GS}=10V, I_D=2A,$ $R_{GEN} = 3\Omega, R_L = 1\Omega$		10		ns
Turn-on Rise Time	$t_r$			20		
Turn-off Delay Time	$t_{d(off)}$			29		
Turn-off Fall Time	$t_f$			21		
<b>Drain-Source Diode Characteristics</b>						
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_s=5A$			1.2	V
Diode Forward Current	$I_s$				5	A
Reverse Recovery Time	$t_{rr}$	$I_F=20A, di/dt=500A/us$		23		nS
Reverse Recovery Charge	$Q_{rr}$				11.7	

## Curve Characteristics

Fig. 1 - Typical Output Characteristics

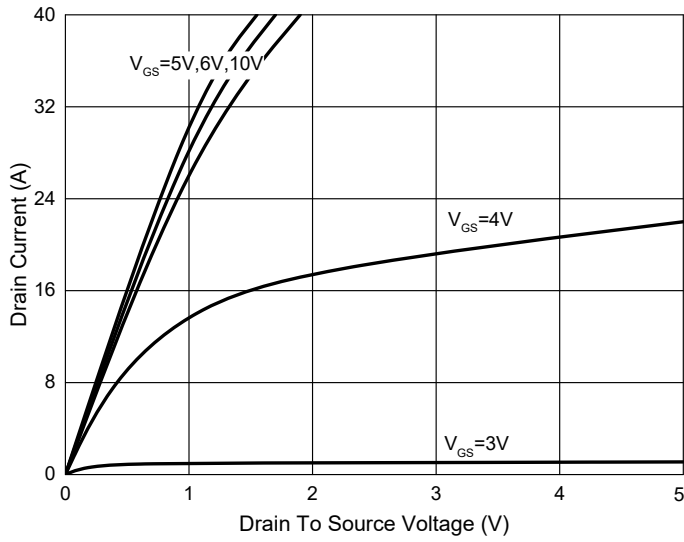


Fig. 2 - Transfer Characteristics

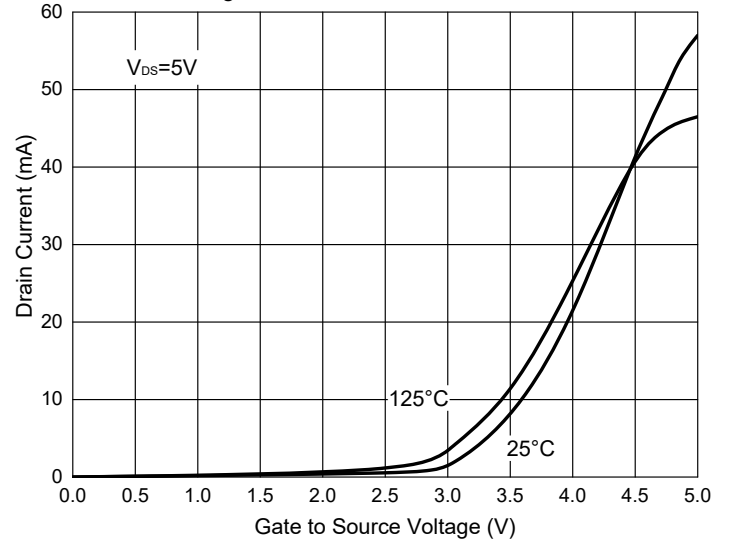


Fig. 3 -  $R_{DS(ON)} - I_D$

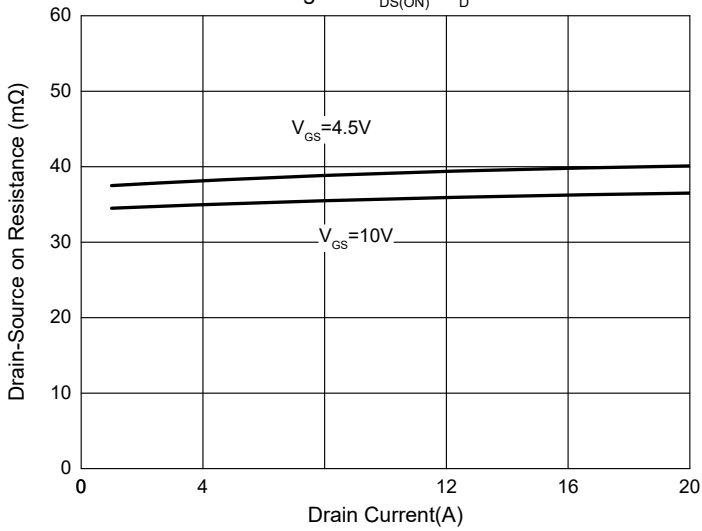


Fig. 4 - Normalized On Resistance Characteristics

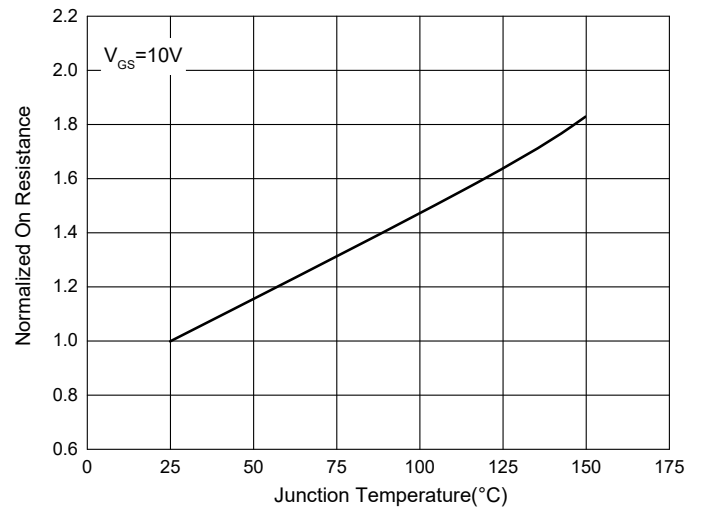


Fig. 5 - Capacitance Characteristics

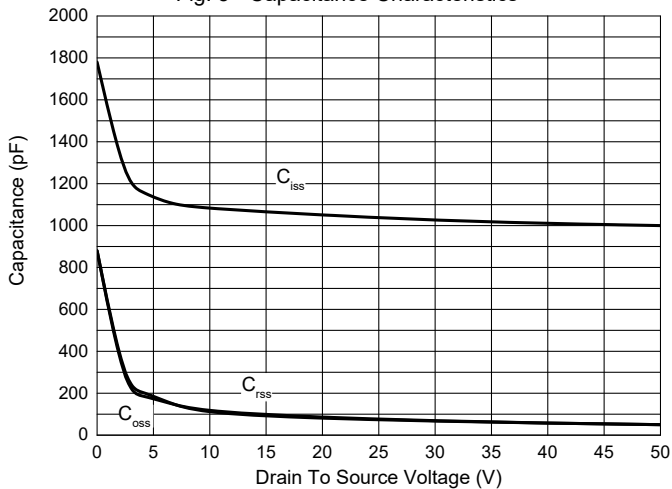
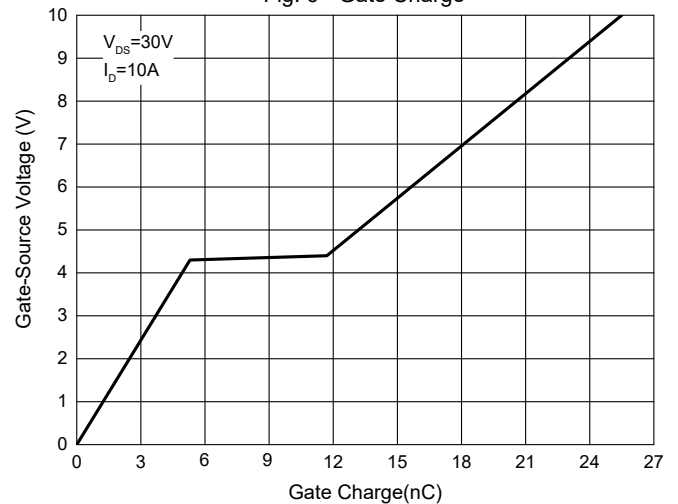


Fig. 6 - Gate Charge



## Curve Characteristics

Fig. 7 - Safe Operation Area

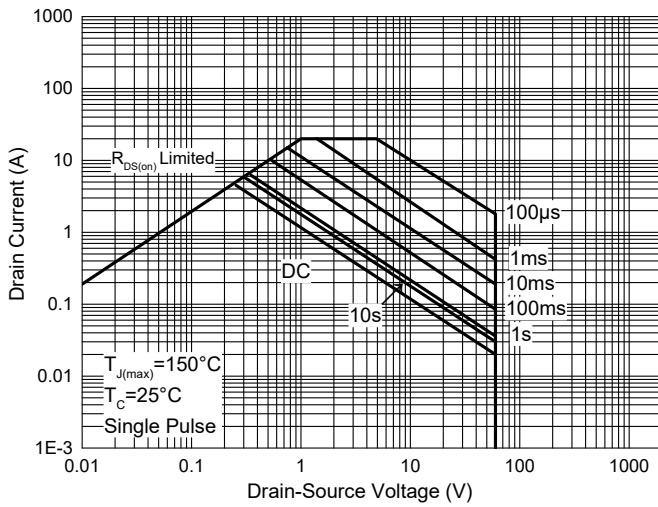
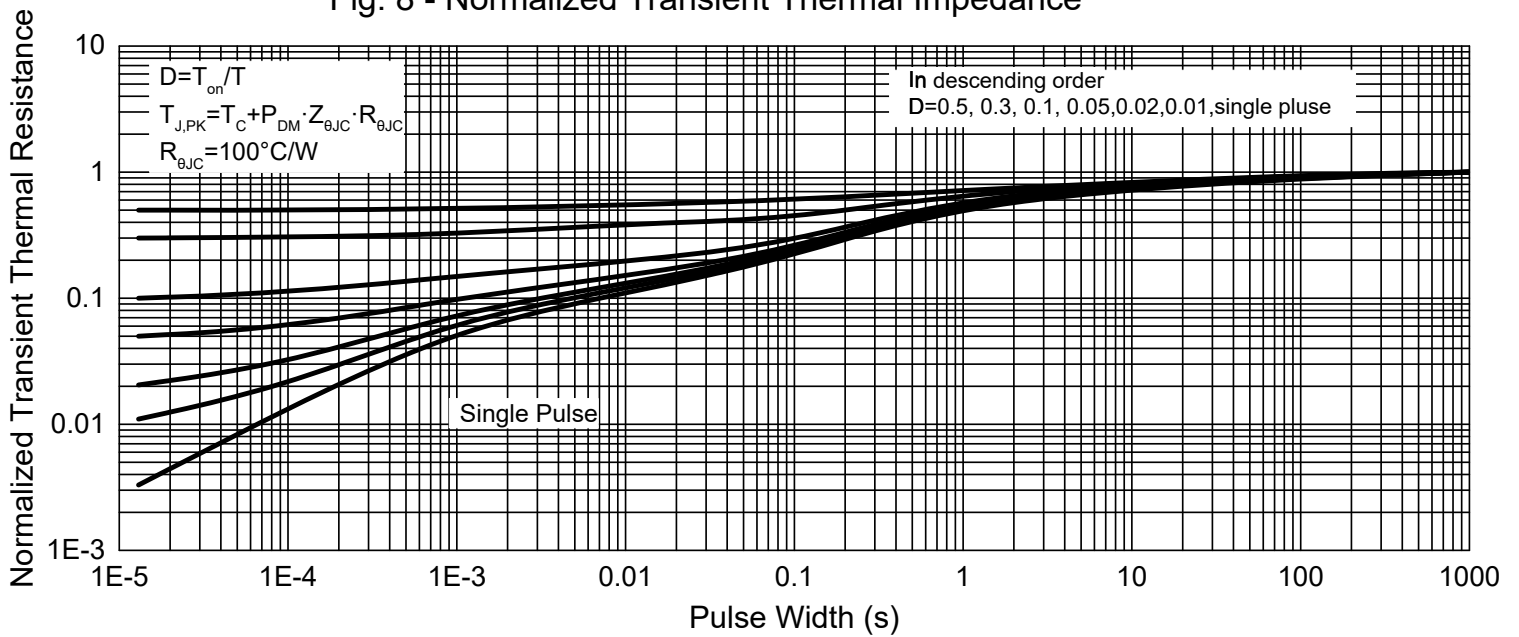


Fig. 8 - Normalized Transient Thermal Impedance



## Ordering Information

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

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