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)

N-Channel Power MOSFET

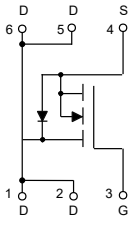
Maximum Ratings

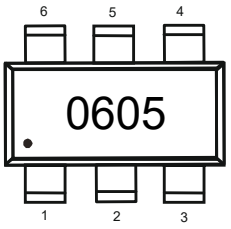
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 100°C/W Junction to Ambient(Note2)

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

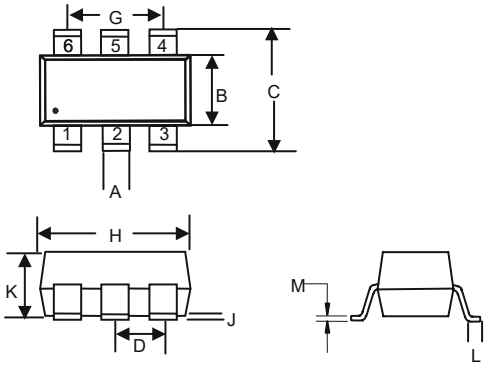
Noet:
1.Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2.Surface Mounted on FR4 Board, t ≤ 10 sec.
3.Pulse Width Limited by Maximum Junction Temperature.

Internal Structure and Marking Code





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 (Ta=25℃ 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-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1.0		2.5	V
Gate-Body Leakage Current	I_{GSS}	V_{GS} =± 20V, V_{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =60V, V_{GS} =0V			1	μA
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=5A		34	43	mΩ
		V_{GS}= 4.5V, I_D=4A		36	47	
Dynamic Characteristics						
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		
Switching Characteristics						
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} =3Ω, R_L=1Ω		10		ns
Turn-on Rise Time	t_r			20		
Turn-off Delay Time	$t_{d(off)}$			29		
Turn-off Fall Time	t_f			21		
Drain-Source Diode Characteristics						
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		μC

Curve Characteristics

Fig. 1 - Typical Output Characteristics

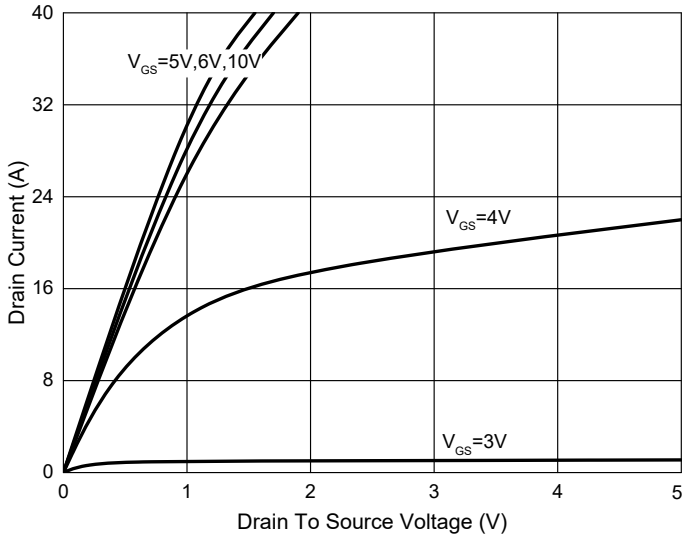


Fig. 2 - Transfer Characteristics

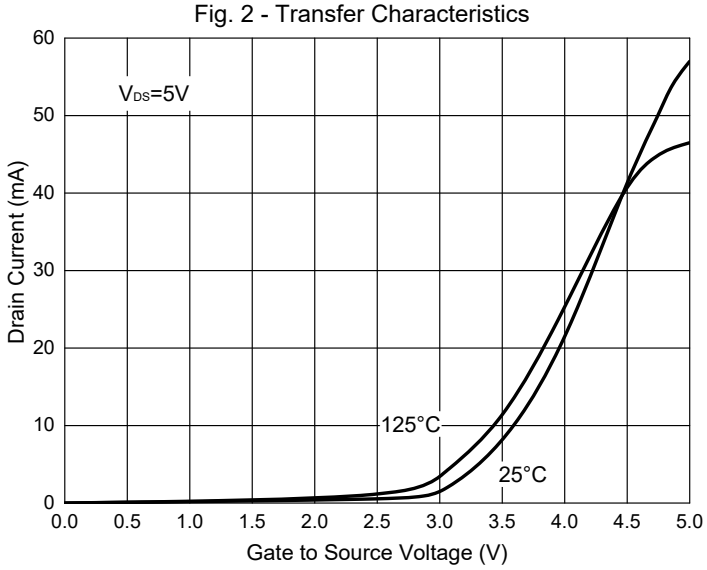


Fig. 3 - $R_{DS(ON)}$—I_D

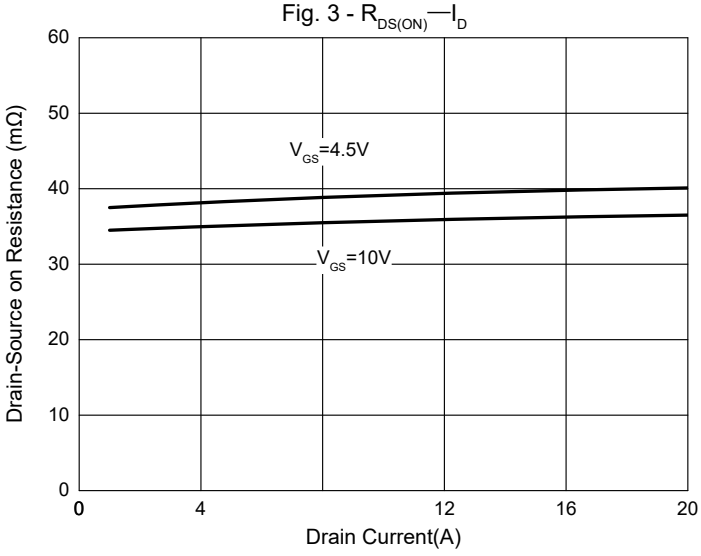


Fig. 4 - Normalized On Resistance Characteristics

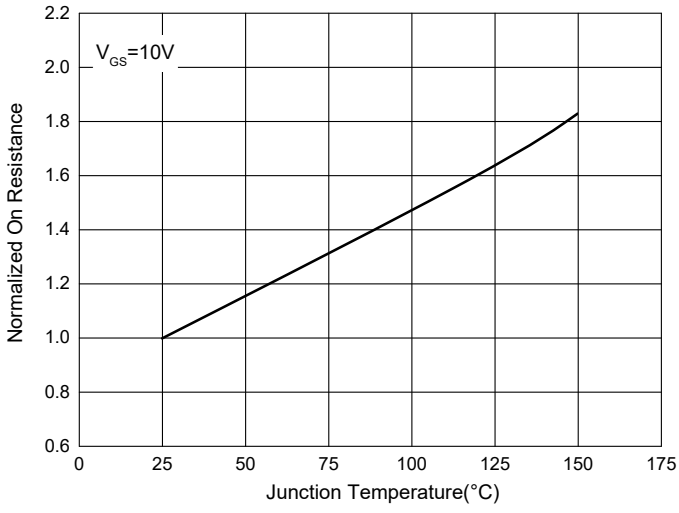


Fig. 5 - Capacitance Characteristics

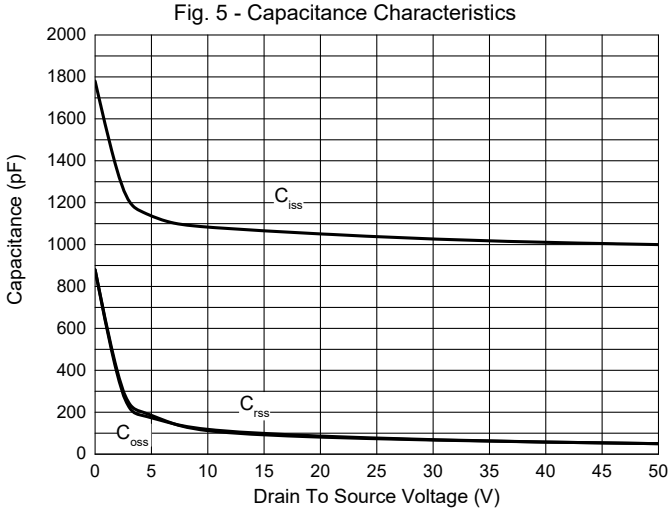
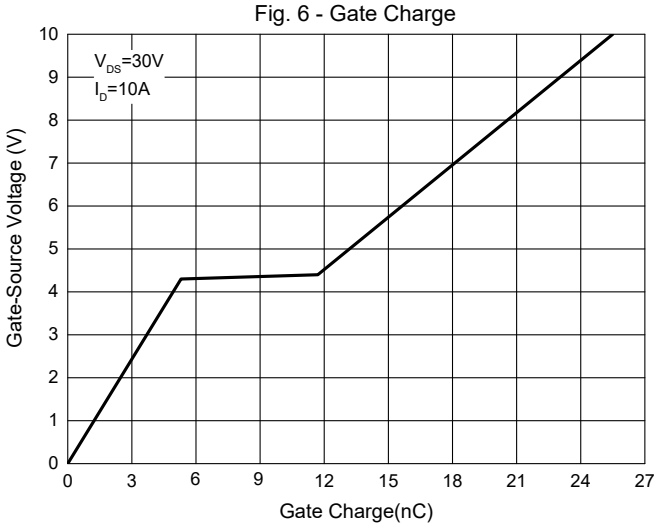


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Safe Operation Area

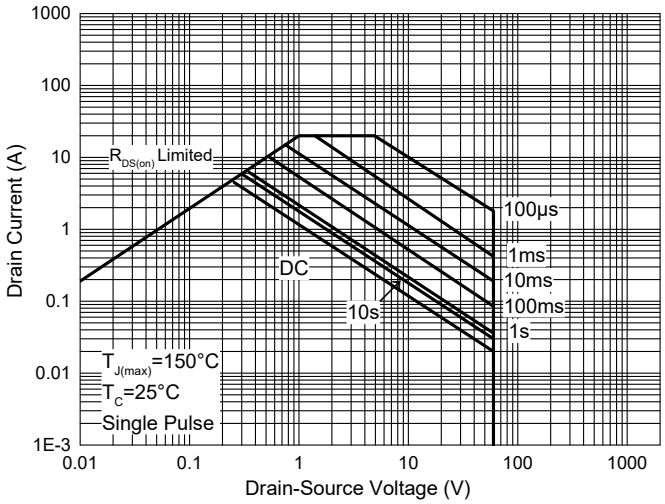
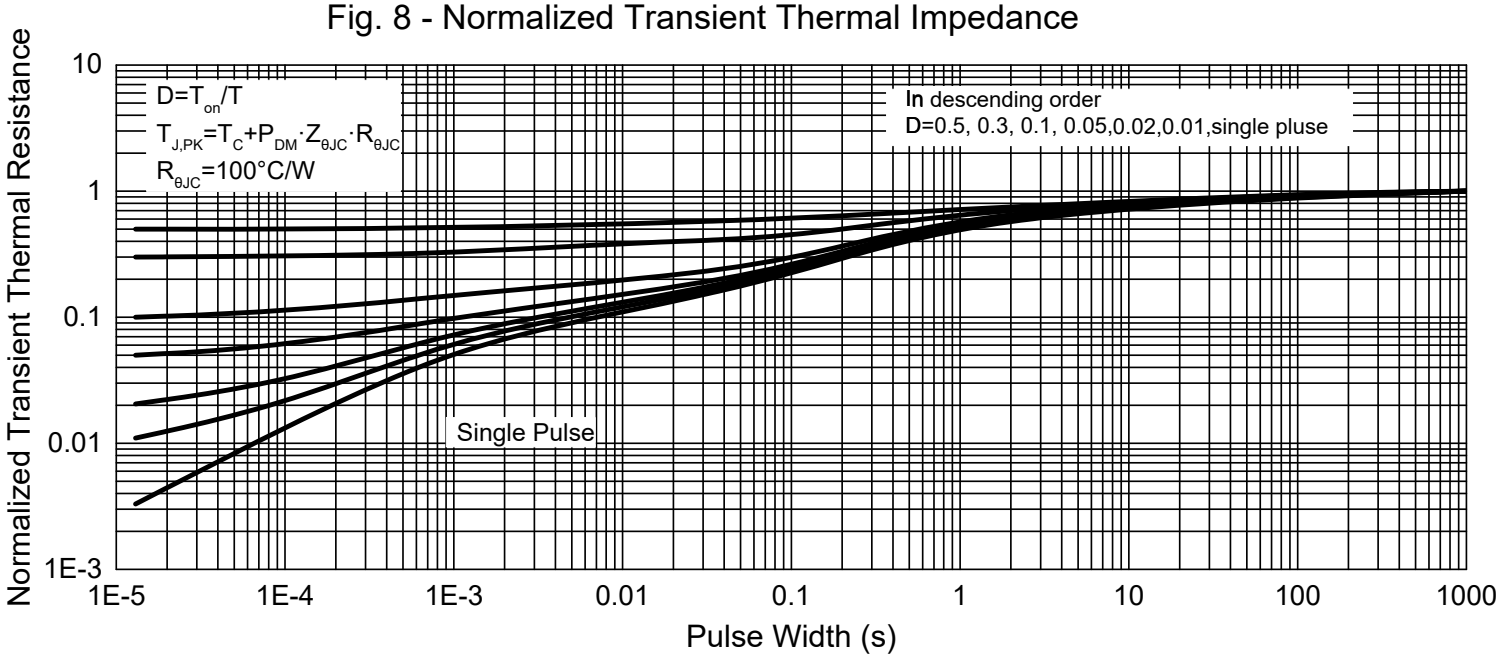


Fig. 8 - Normalized Transient Thermal Impedance



Ordering Information

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

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