

Features

- Trench Power LV MOSFET Technology
- AEC-Q101 Qualified
- Low R_{DS(ON)}
- Moisture Sensitivity Level 1
- 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

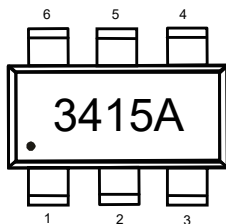
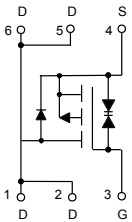
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 120°C/W Junction to Ambient^(Note2)

Parameter	Symbol	Rating	Unit
Drain -source Voltage	V _{DS}	-20	V
Gate -Source Voltage	V _{GS}	±10	V
Drain Current-Continuous	I _D	T _A =25°C	-5
		T _A =100°C	-3.2
Drain Current-Pulse ^(Note 3)	I _{DM}	-20	A
Power Dissipation ^(Note4)	P _D	1	W

Note:

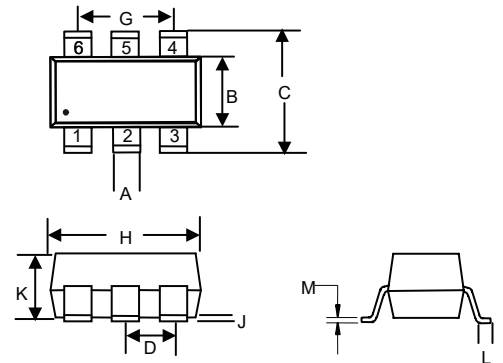
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of R_{θJA} is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.
3. Repetitive rating; pulse width limited by max. junction temperature.
4. P_D is based on max. junction temperature, using junction to ambient thermal resistance.

Internal Structure and Marking Code



P-Channel MOSFET

SOT23-6L



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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 10V$			± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V$			-1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.5	-0.85	-1.25	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-5A$		28	45	m Ω
Gate Resistance	R_g	F=1 MHz, Open drain		17		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				-5	A
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-5A$			-1.2	V
Reverse Recovery Time	t_{rr}	$I_F=-5A, dI_F/dt=-100A/\mu s$		20		ns
Reverse Recovery Charge	Q_{rr}			2.5		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=-10V, V_{GS}=0V, f=1MHz$		540		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			100		
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-10V, I_D=-5A$		13		nC
Gate-Source Charge	Q_{gs}			2		
Gate-Drain Charge	Q_{gd}			2		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-10V, V_{GS}=-10V,$ $R_{GEN}=2.2\Omega, I_{DS}=-5A$		5		ns
Turn-On Rise Time	t_r			47		
Turn-Off Delay Time	$t_{d(off)}$			52		
Turn-Off Fall Time	t_f			69		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

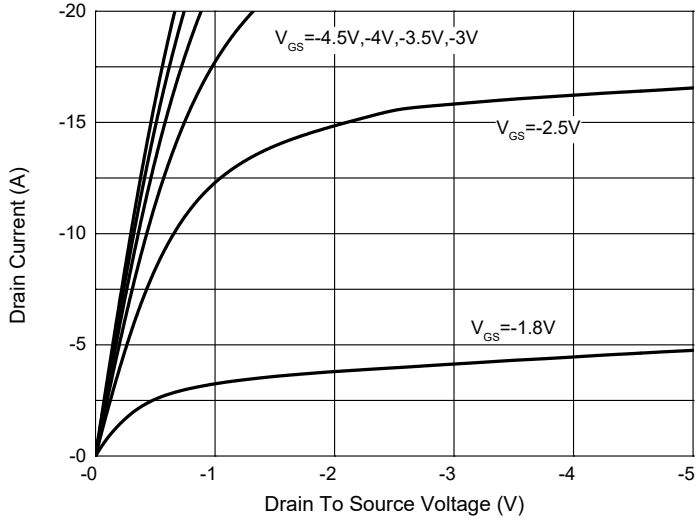


Fig. 2 - Transfer Characteristics

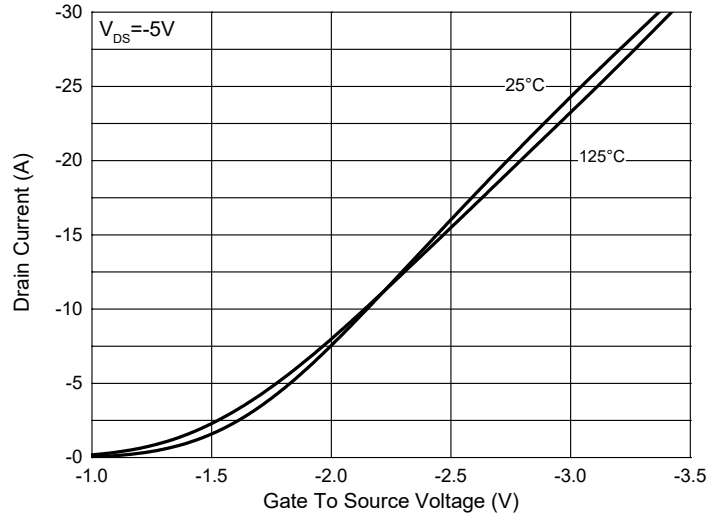


Fig. 3 - $R_{DS(ON)} - V_{GS}$

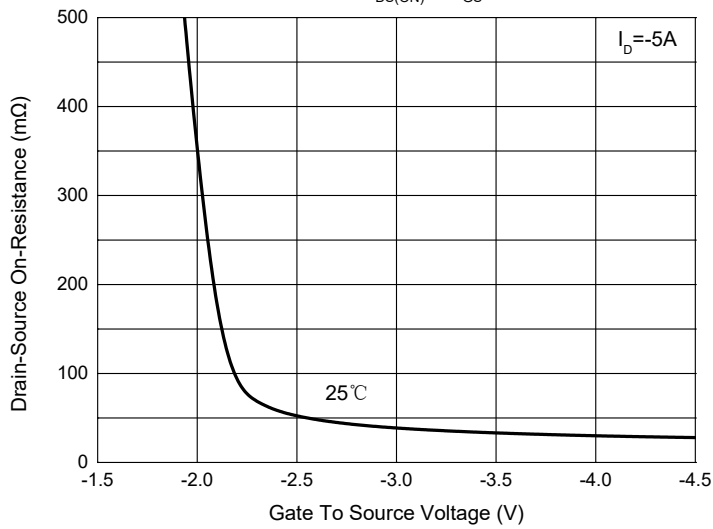


Fig. 4 - $R_{DS(ON)} - I_D$

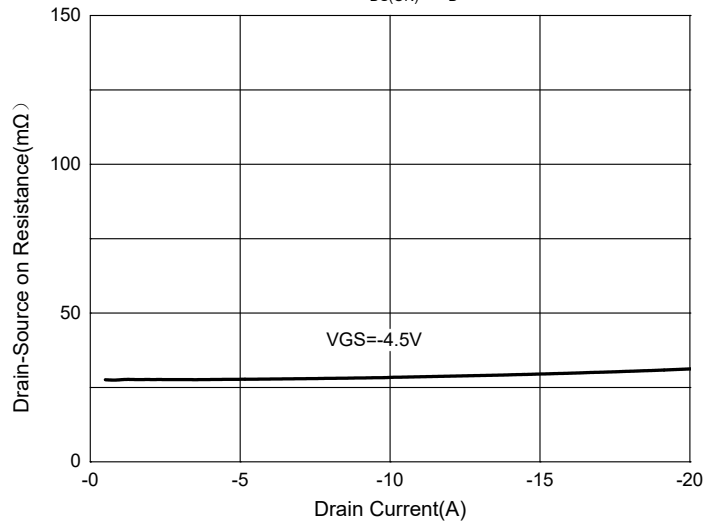


Fig. 5 - Capacitance Characteristics

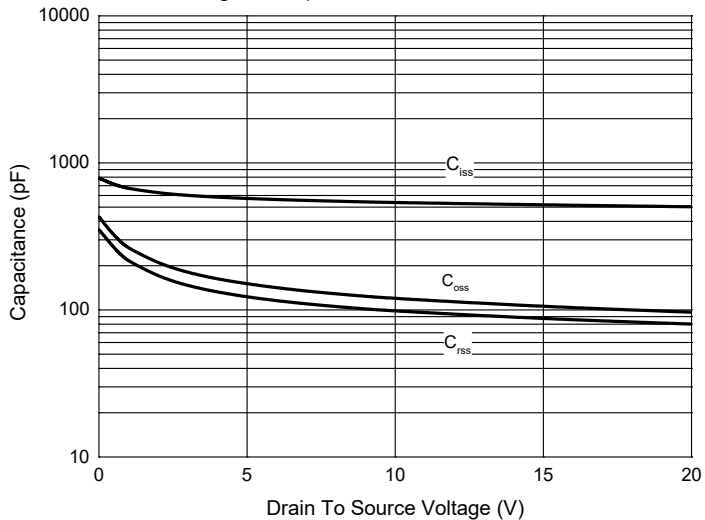
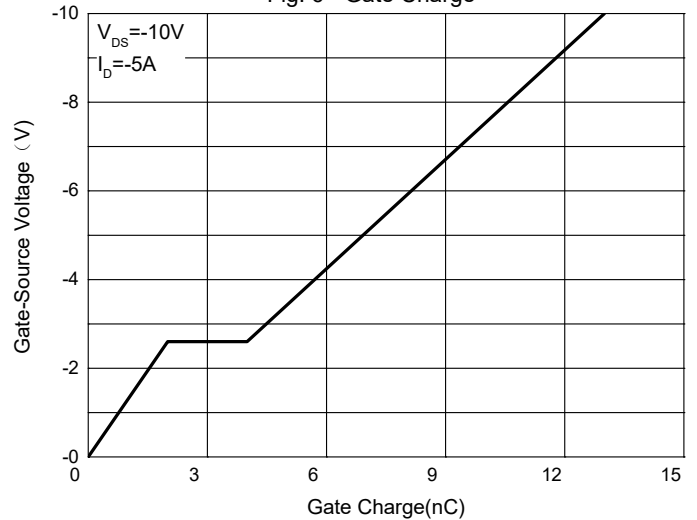


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Normalized Threshold Voltage

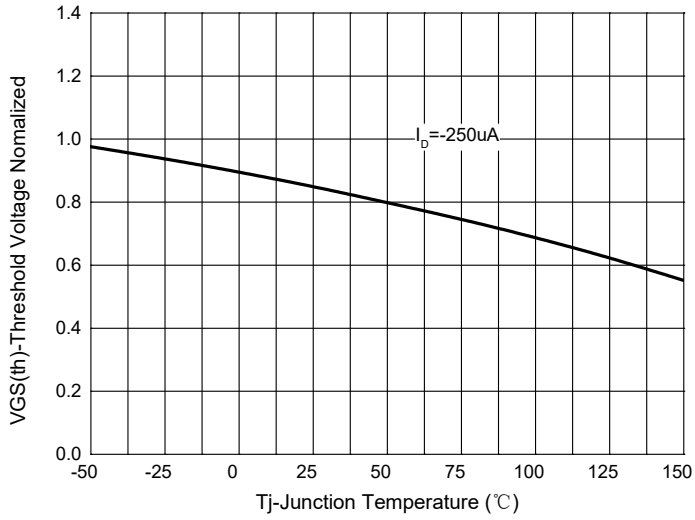


Fig.8-Normalized On Resistance Characteristics

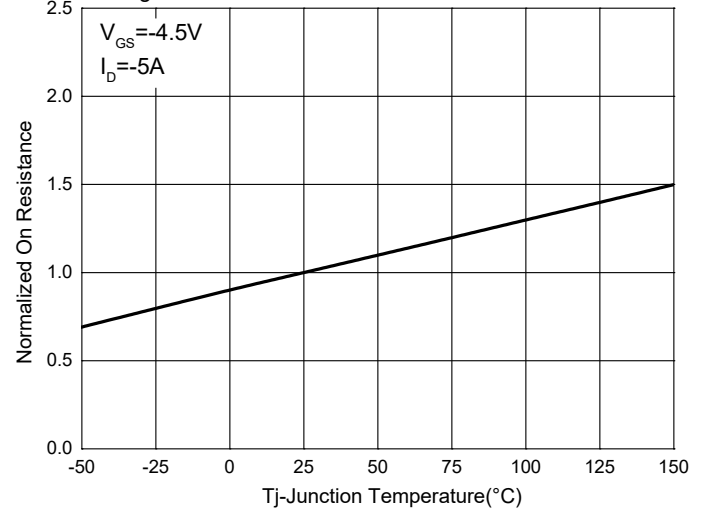


Fig.9 - I_S—V_{SD}

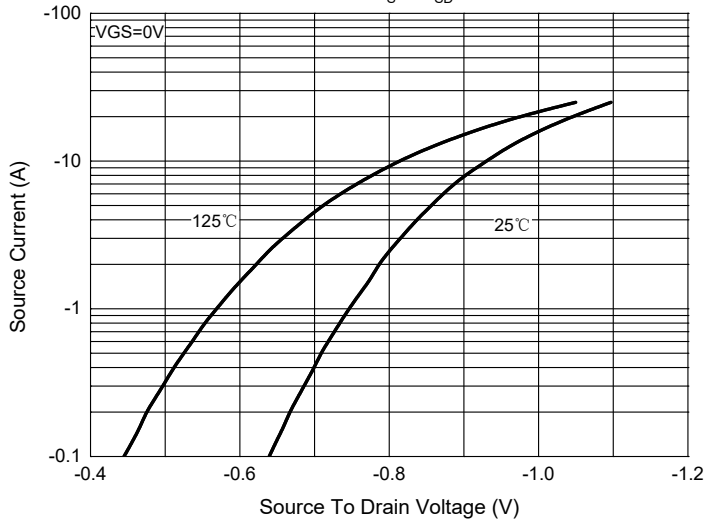


Fig. 10 - Drain Current

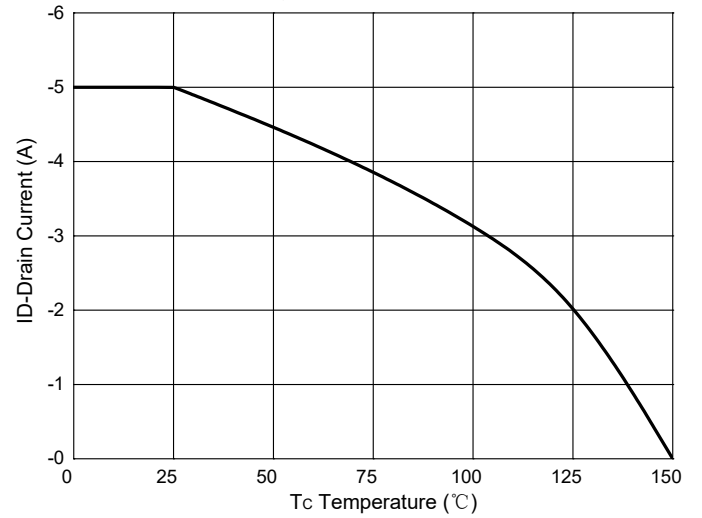
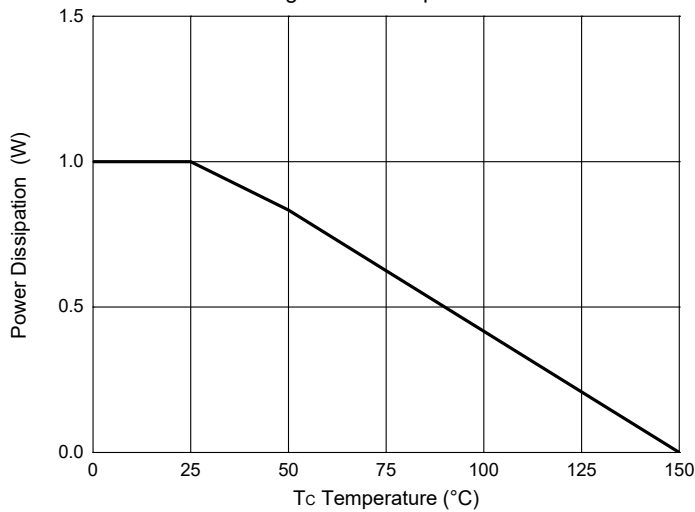


Fig.11-PD Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

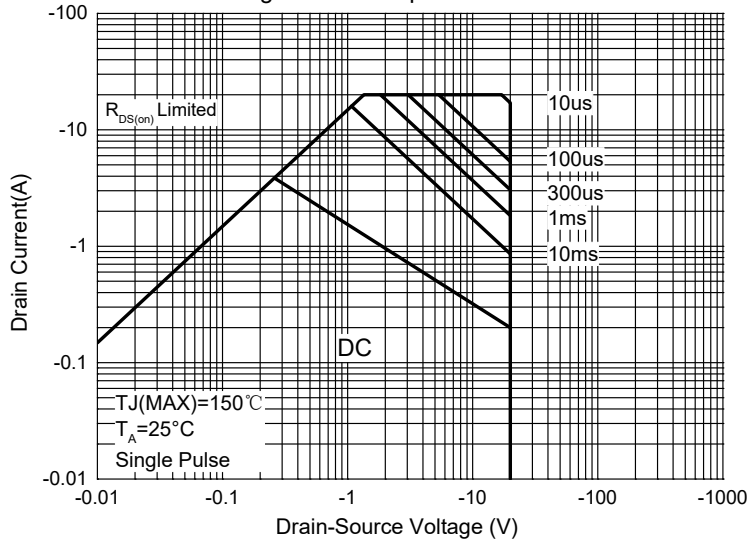
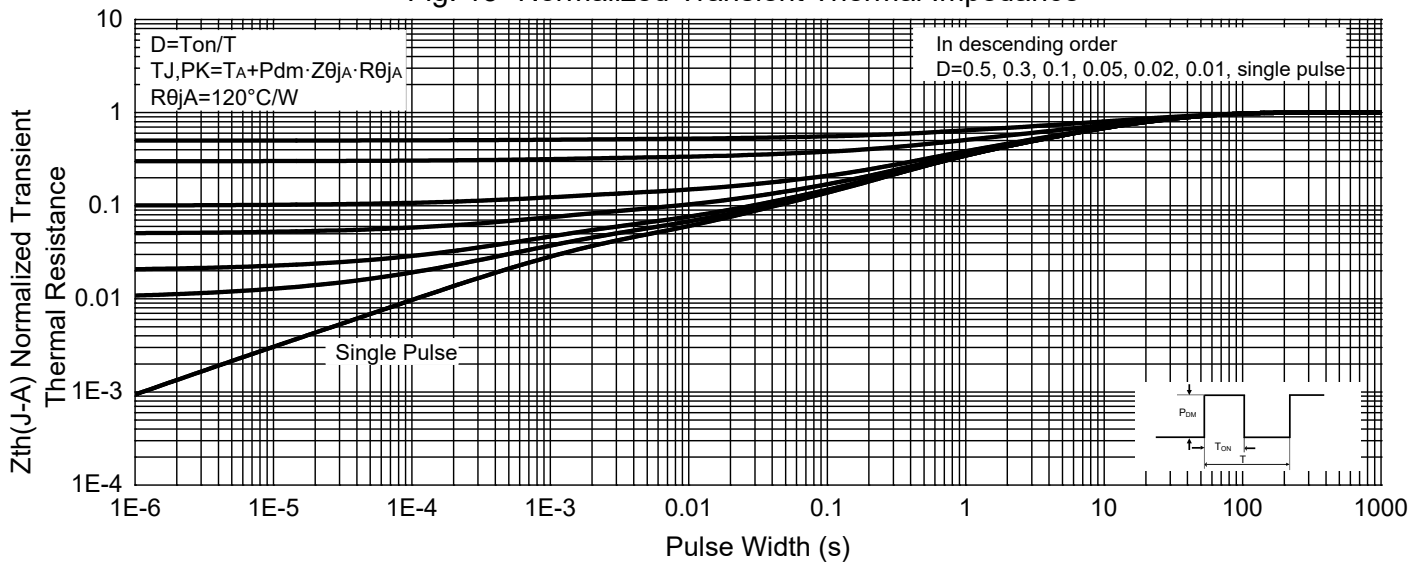


Fig. 13 - Normalized Transient Thermal Impedance



Ordering Information

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

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