



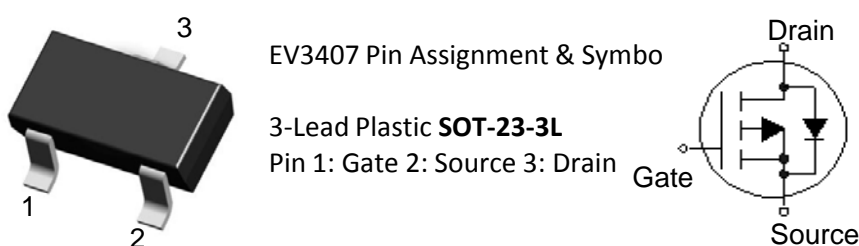
P-Channel Enhancement-Mode MOSFET (-30V, -4.3A)

PRODUCT SUMMARY

V_{DSS}	I_D	$R_{DS(on)}$ (m Ω)TYP
-30V	-4.3A	50 @ $V_{GS} = -10V, I_D = -4.3A$
		63 @ $V_{GS} = -4.5V, I_D = -3.0A$

Features

- Advanced Trench Process Technology
- High Density Cell Design for Ultra Low On-Resistance
- Fully Characterized Avalanche Voltage and Current
- Improved Shoot-Through FOM
- Ordering information : EV3407 (Lead (Pb) -free and halogen-free)

 <p>EV3407 Pin Assignment & Symbol</p> <p>3-Lead Plastic SOT-23-3L</p> <p>Pin 1: Gate 2: Source 3: Drain</p>	TOP Marking
	3 4 0 7.

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$, unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current (Continuous)	-4.3	A
I_{DM}	Drain Current (Pulsed) ^a	-20	A
P_D	Total Power Dissipation @ $T_A = 25^\circ\text{C}$	1.4	W
I_S	Maximum Diode Forward Current	-2	A
T_j, T_{stg}	Operating Junction and Storage Temperature Range	-55 to +150	$^\circ\text{C}$
R_{QJA}	Thermal Resistance Junction to Ambient (PCB mounted) ^b	80	$^\circ\text{C/W}$

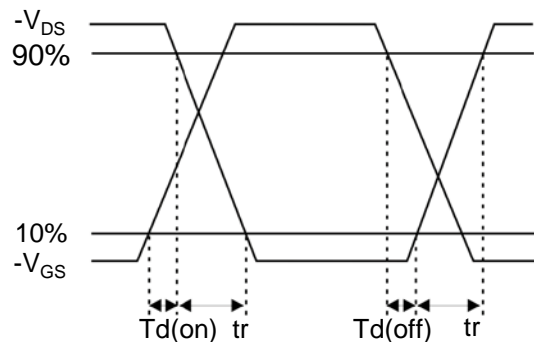
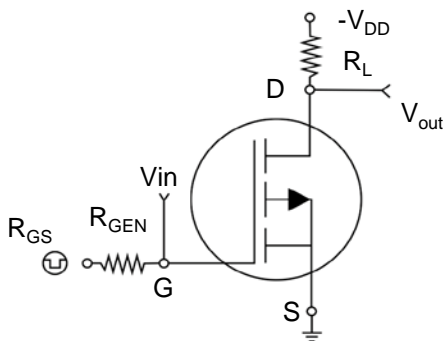
a: Repetitive Rating: Pulse width limited by the maximum junction temperature.

b: 1-in² 2oz Cu PCB board

Electrical Characteristics (T_A=25°C, unless otherwise noted)

Symbol	Characteristic	Test Conditions	Min.	Typ.	Max.	Unit
• Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-30V, V _{GS} =0V	-	-	-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
• On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250uA	-1	-1.4	-2	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-4.3A	-	50	60	mΩ
		V _{GS} =-4.5V, I _D =-3.0A	-	65	78	
• Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1MHz	-	553	-	PF
C _{oss}	Output Capacitance		-	93	-	
C _{rss}	Reverse Transfer Capacitance		-	63	-	
• Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =-15V, I _D =-4.3A, V _{GS} =-10V	-	9.86	-	nC
Q _{gs}	Gate-Source Charge		-	3.28	-	
Q _{gd}	Gate-Drain Charge		-	1.92	-	
t _{d(on)}	Turn-on Delay Time	V _{DD} =-15V, R _L =5Ω, I _D =-3A, V _{GEN} =-10V, R _G =6Ω	-	11	-	nS
t _r	Turn-on Rise Time		-	2.85	-	
t _{d(off)}	Turn-off Delay Time		-	23	-	
t _f	Turn-off Fall Time		-	3.2	-	
• Drain-Source Diode Characteristics						
V _{SD}	Drain-Source Diode Forward	V _{GS} =0V, I _S =-2.6A	-	-	-1.3	V

Note: Pulse Test: Pulse Width ≤ 300us, Duty Cycle ≤ 2%



Switching Test Circuit and Switching Waveforms

Typical Characteristics Curves (Ta=25°C, unless otherwise note)

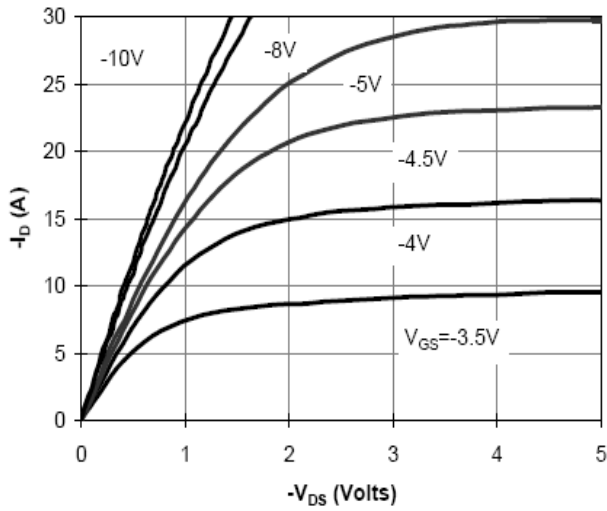


Figure 1: On-Region Characteristics

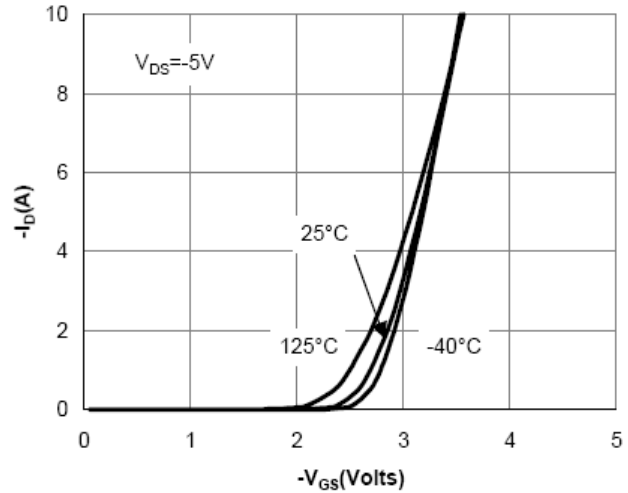


Figure 2: Transfer Characteristics

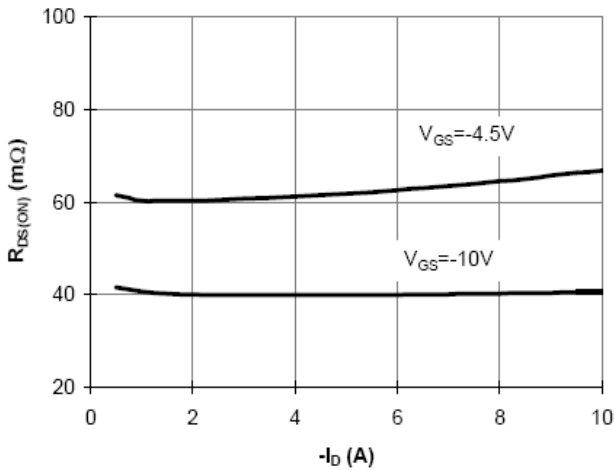


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

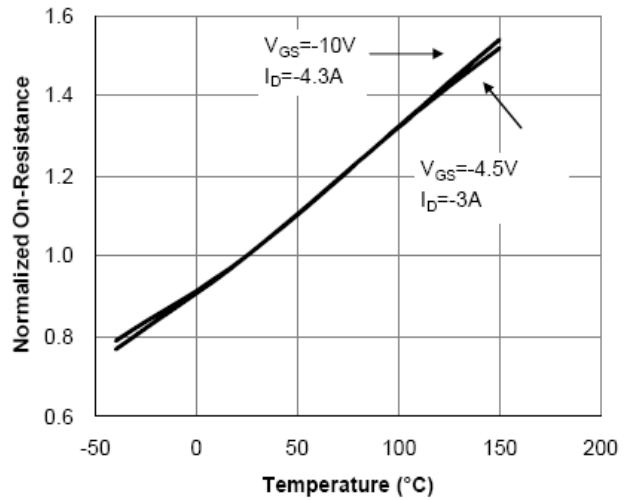


Figure 4: On-Resistance vs. Junction Temperature

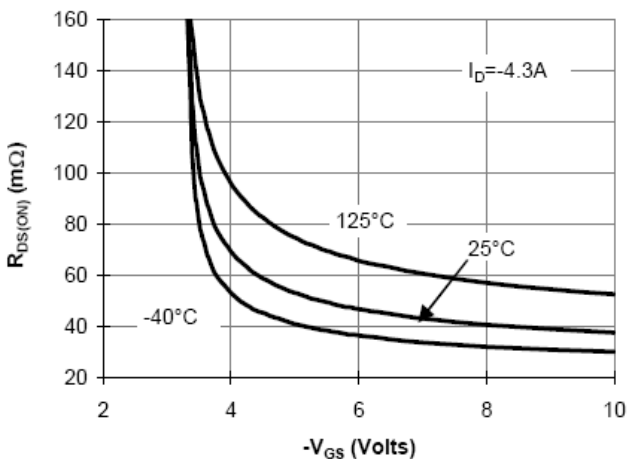


Figure 5: On-Resistance vs. Gate-Source Voltage

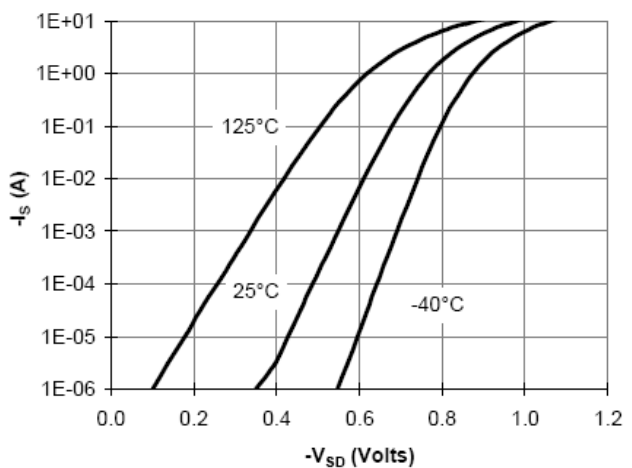


Figure 6: Body-Diode Characteristics

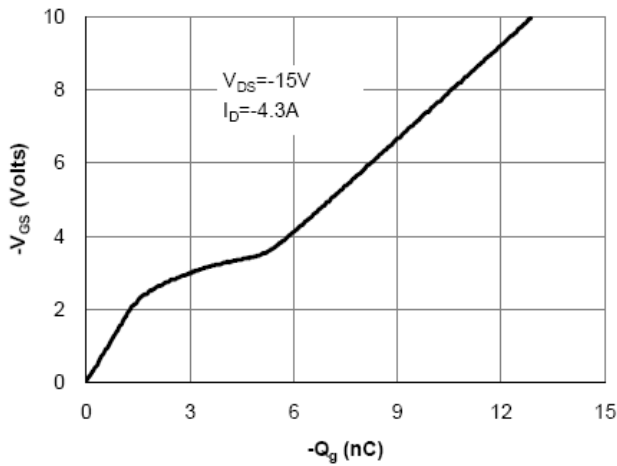


Figure 7: Gate-Charge Characteristics

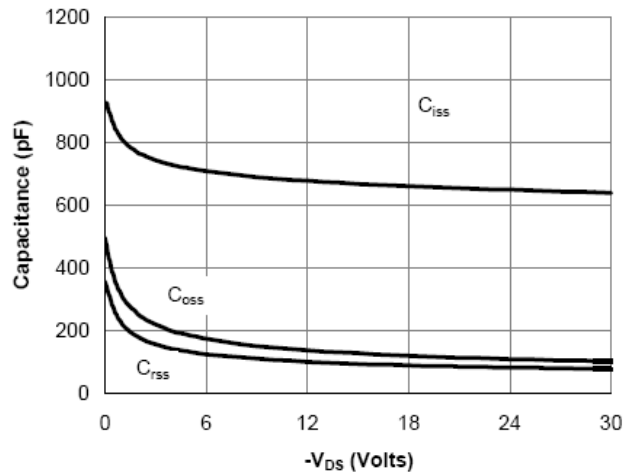


Figure 8: Capacitance Characteristics

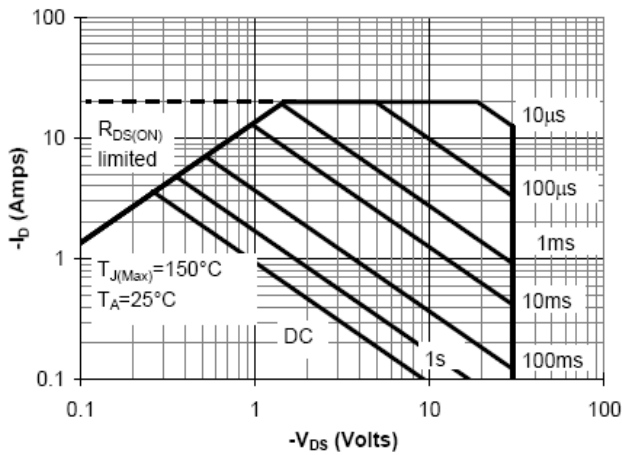


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

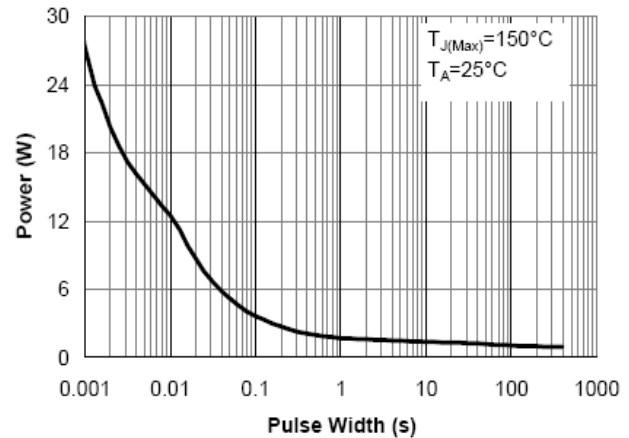


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

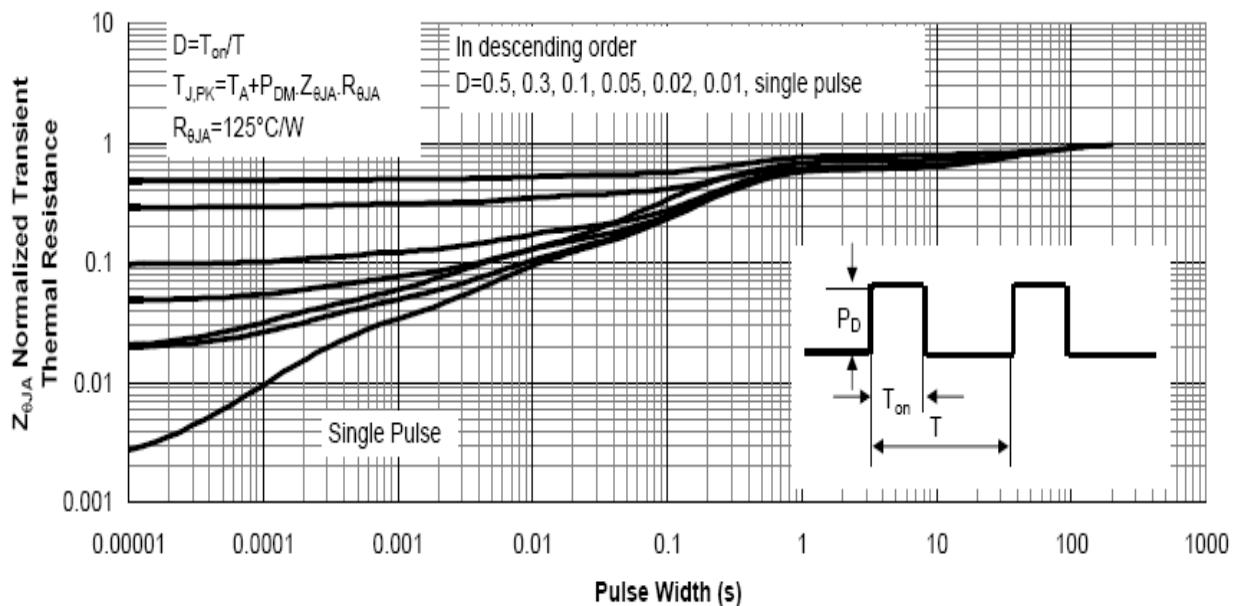
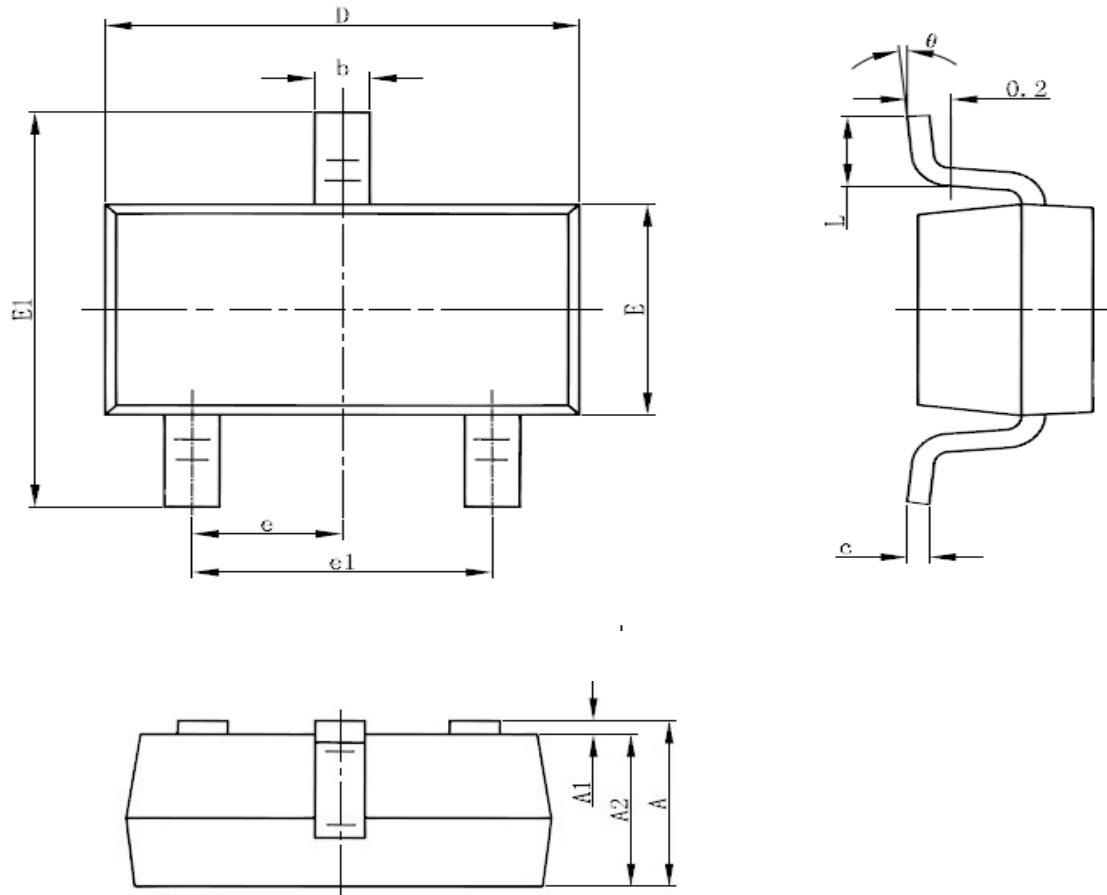


Figure 11: Normalized Maximum Transient Thermal Impedance (Note E)

SOT-23-3L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.850	1.250	0.033	0.049
A1	0.000	0.100	0.000	0.004
A2	0.7	1.150	0.028	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

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