YD3409

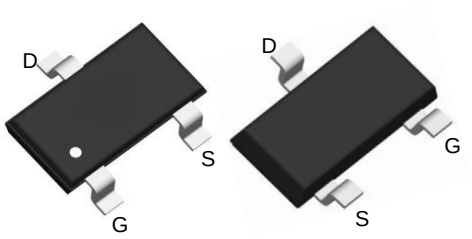
P-Channel Enhancement Mode MOSFET

Features

- -30V / -2.6A
- $R_{DS(ON)}$=80mΩ (typ) @VGS=-10V
  $R_{DS(ON)}$=130mΩ (typ) @VGS=-4.5V
- 100% UIS & RG Tested
- Reliableand Rugged
- Lead Freeand Green Devices Available (RoHS Compliant)

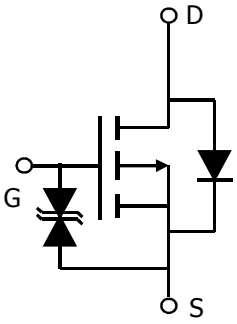
SOT23-3L

Top View Bottom View



Applications

- Power Management for Industrial DC/DC Converters



P Channel

Marking

Marking	A9****

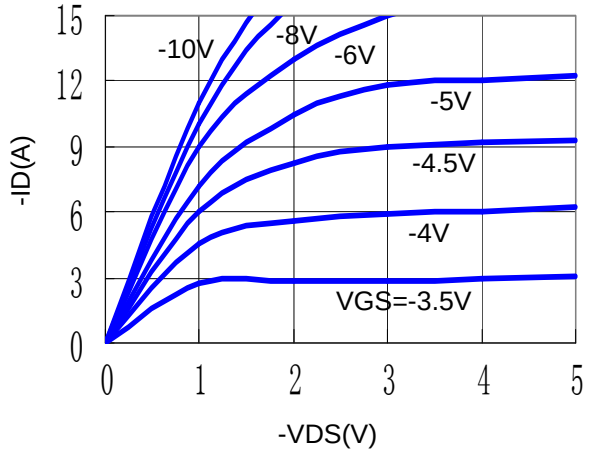
ABSOLUTE MAXIMUM RATINGS (T_A = 25℃ Unless otherwise noted)

Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		-30	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current(TA=25C)		-2.6	A
	Continuous Drain Current(TA=75C)		-2.2	
I_{DM}	Pulsed Drain Current		-20	A
I_S	Continuous Source Current (Diode Conduction)		-1.5	A
P_D	Power Dissipation	T_A=25℃	1.4	W
		T_A=70℃	0.9	
T_J	Operation Junction Temperature		150	℃
T_{STG}	Storage Temperature Range		-55~+150	℃
$R_{\theta JA}$	Thermal Resistance Junction to Ambient		120	℃/W

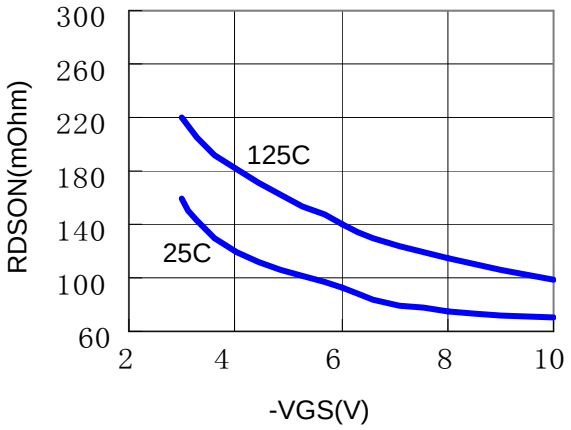
ELECTRICAL CHARACTERISTICS(T_A=25℃ Unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Parameters						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=-250uA	-30			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=-250uA	-2.4		-1.2	V
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±20V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-30V, V_{GS}=0			-1	uA
		V_{DS}=-30V, V_{GS}=0 T_J=55℃			-5	
$R_{DS(ON)}$	Drain-Source On-Resistance	V_{GS}=-10V, I_D=-2.6A		80	110	mΩ
		V_{GS}=-4.5V, I_D=-2A		130	180	
Source-Drain Diode						
V_{SD}	Diode Forward Voltage	I_S=-1.0A, V_{GS}=0V		-0.7	-1.0	V
Dynamic Parameters						
Q_g	Total Gate Charge	V_{DS}=-15V		9		nC
Q_{gs}	Gate-Source Charge	V_{GS}=-10V		0.9		
Q_{gd}	Gate-Drain Charge	I_D=-2.6A		1.5		
C_{iss}	Input Capacitance	V_{DS}=-15V		155		pF
C_{oss}	Output Capacitance	V_{GS}=0V		51		
C_{rss}	Reverse Transfer Capacitance	f=1MHz		22		
$T_{d(on)}$	Turn-On Time	V_{DS}=-15V		11		nS
T_r		R_L=5.8Ω		5		
$T_{d(off)}$	Turn-Off Time	I_D=-1A		16		
T_f		V_{GEN}=-10V R_G=3Ω		7		

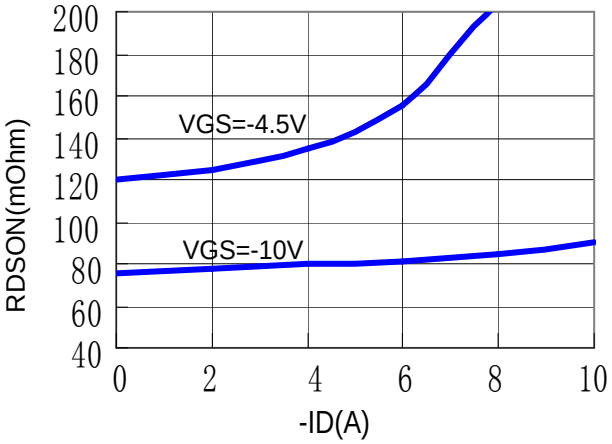
On-Region Characteristics



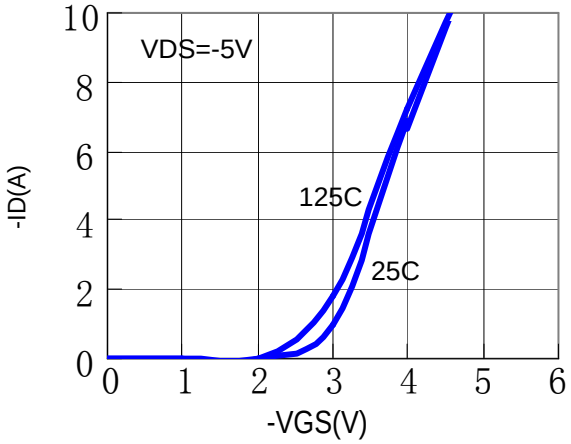
Drain Source On Resistance



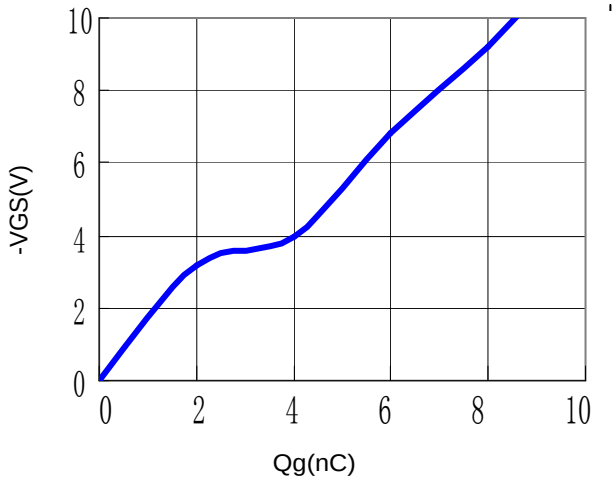
Drain-Source On Resistance



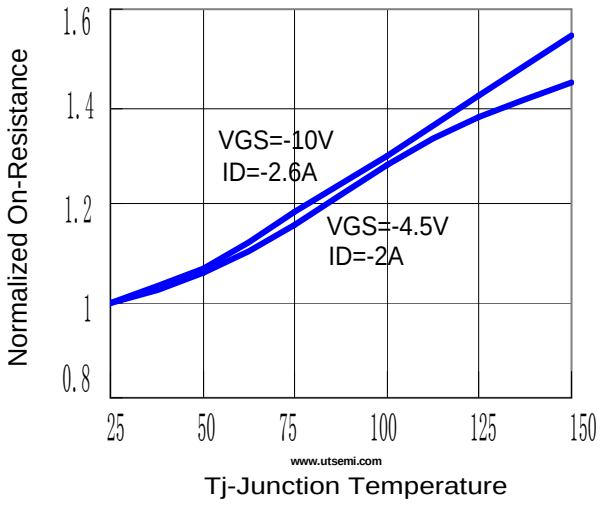
Transfer Characteristics



Gate Charge

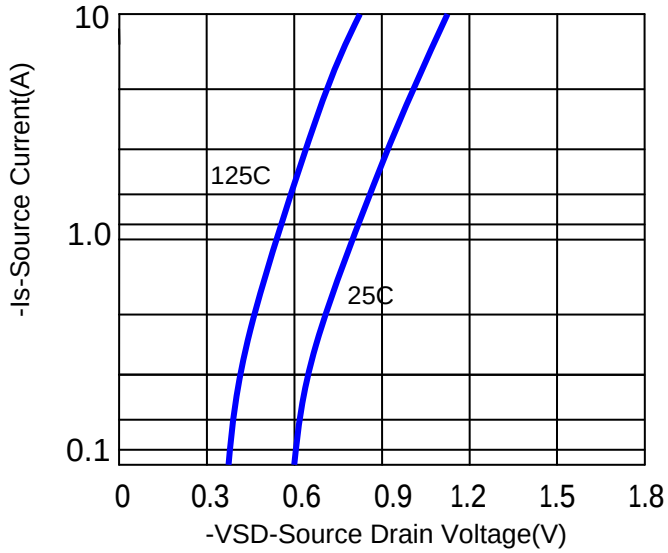


RON @Junction Temperature

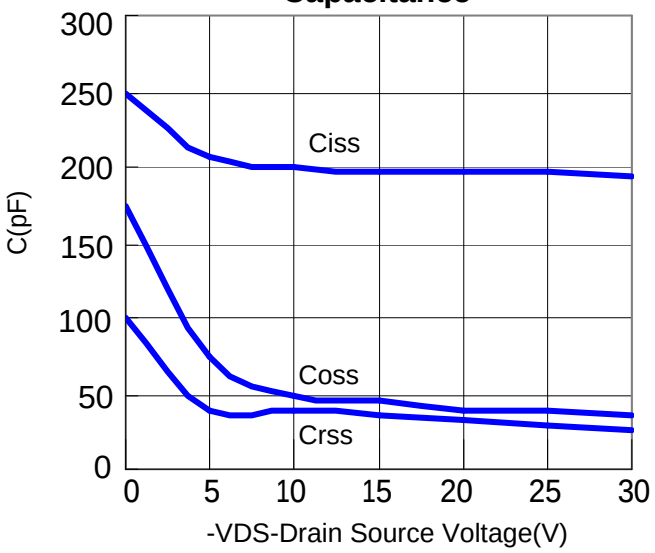


TYPICAL CHARACTERISTICS

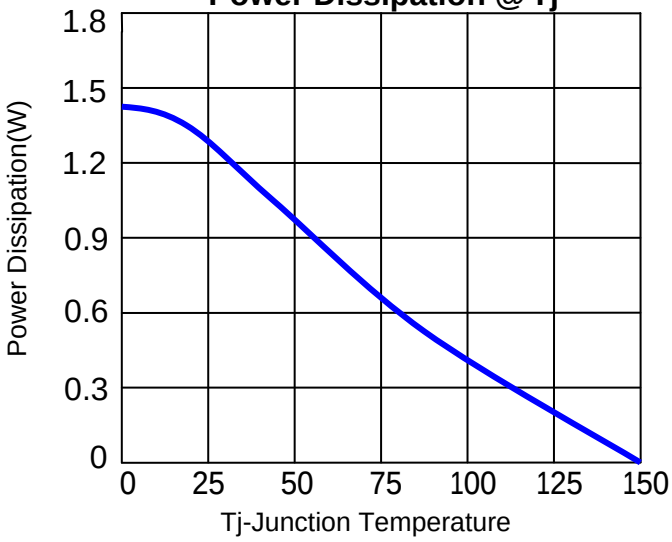
Source Drain Diode Forward



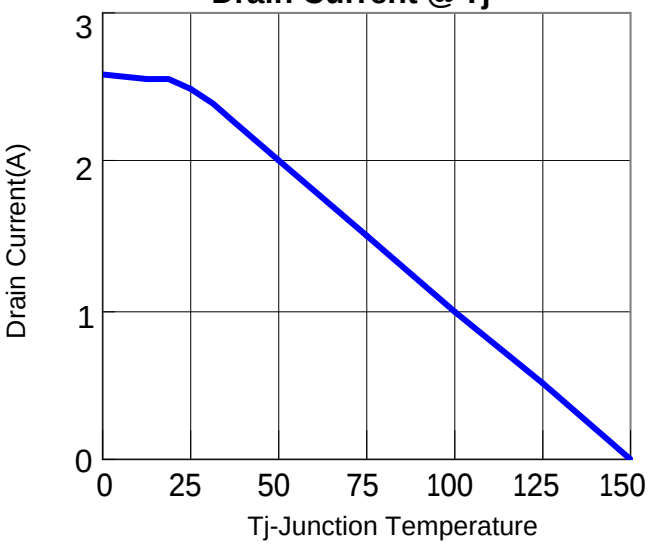
Capacitance



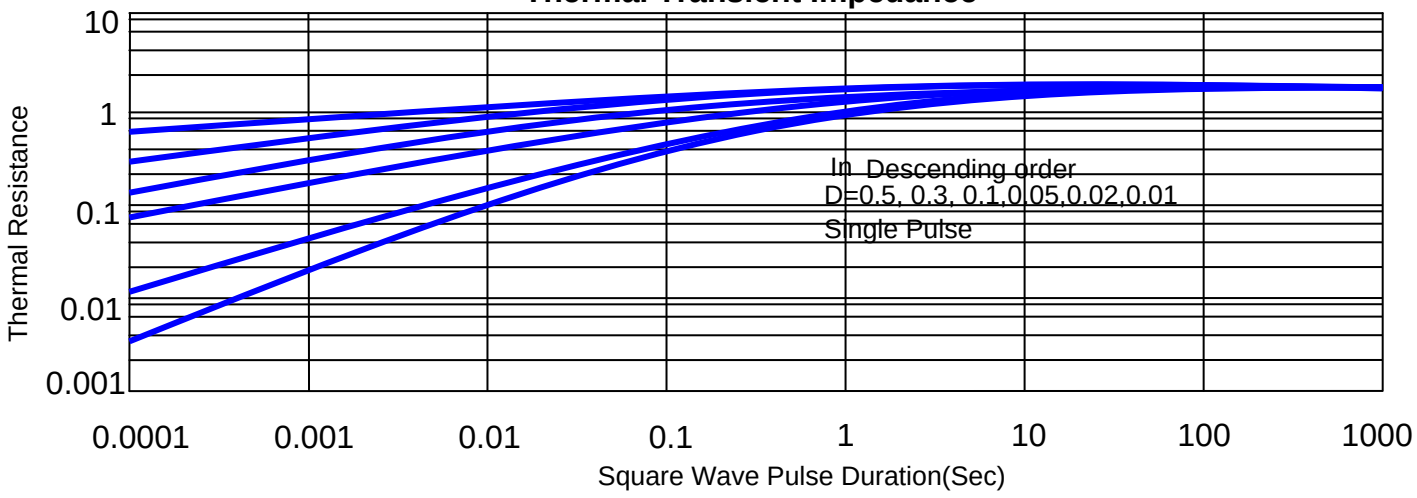
Power Dissipation @Tj



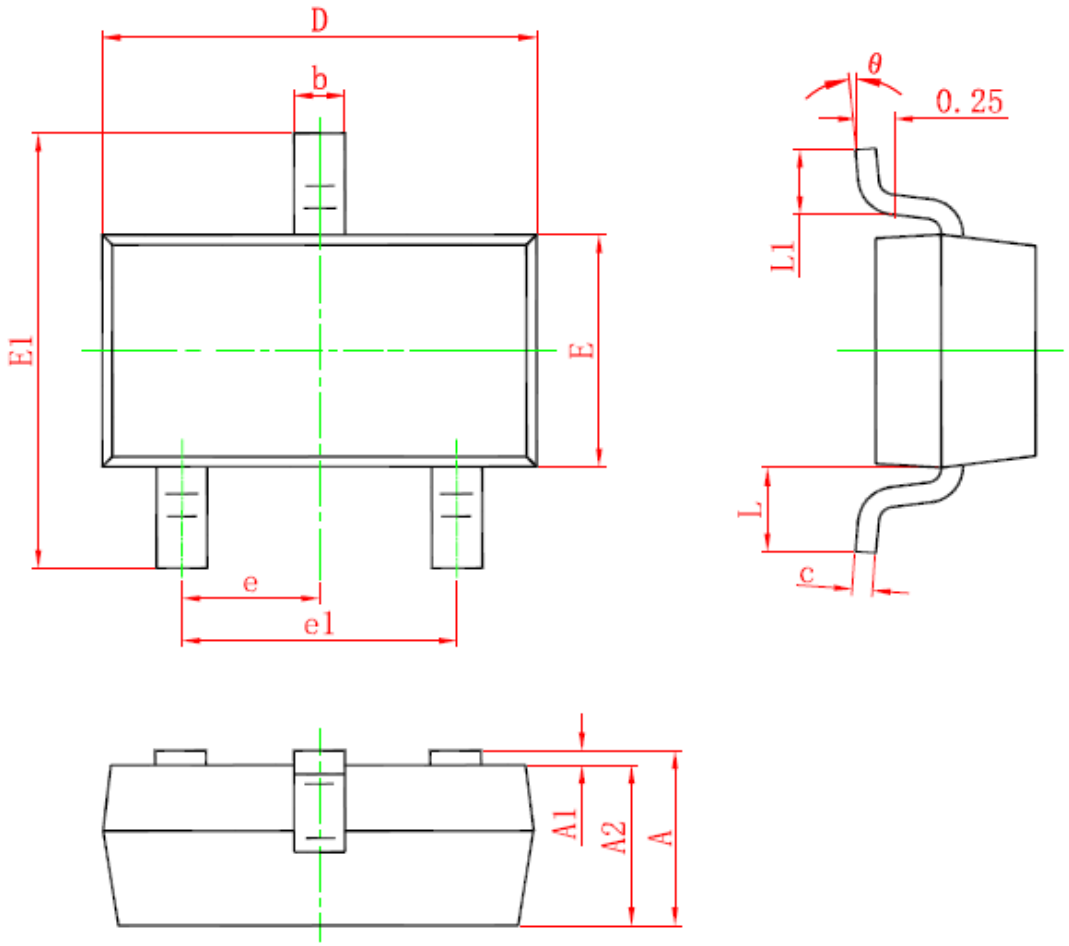
Drain Current @Tj



Thermal Transient Impedance



SOT23-3L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

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