

SOT-23-3L Plastic-Encapsulate MOSFETS

AO3403

P-Channel 30-V(D-S) MOSFET

V(BR)DSS	RDS(on)MAX	ID
-30 V	115mΩ@-10V	-2.6A
	140mΩ@-4.5V	
	170mΩ@-2.5V	

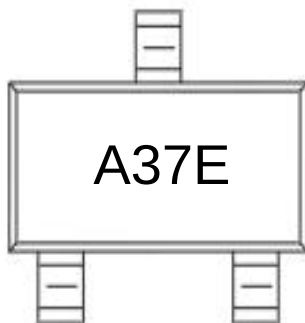
FEATURE

※ TrenchFET Power MOSFET

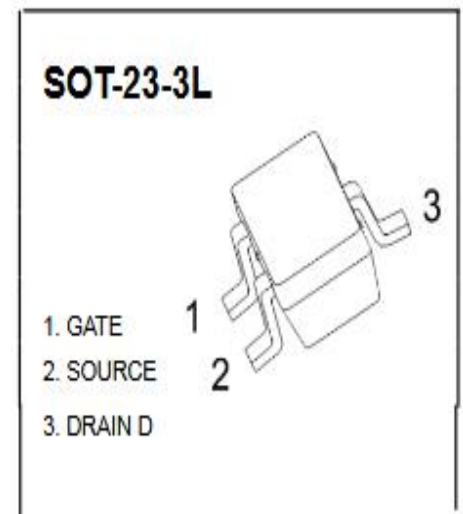
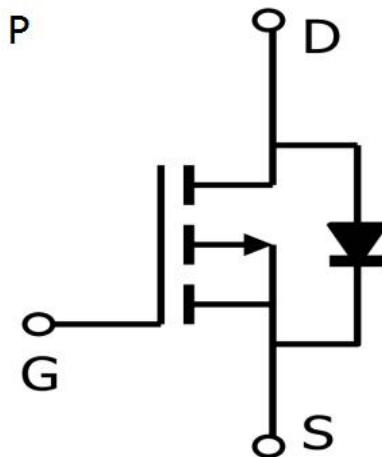
APPLICATION

 ※ Load Switch for Portable Devices
 ※ DC/DC Converter

MARKING



Equivalent Circuit



Maximum ratings (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	-30	V
Gate-Source Voltage	VGS	±12	
Continuous Drain Current	ID	-2.6	A
Pulsed Diode Current	IDM	-15	
Continuous Source-Drain Current(Diode Conduction)	IS	-0.8	
Power Dissipation	PD	1.4	W
Thermal Resistance from Junction to Ambient (t≤5s)	RθJA	125	℃/W
Operating Junction	TJ	150	℃
Storage Temperature	TSTG	-55~+150	℃

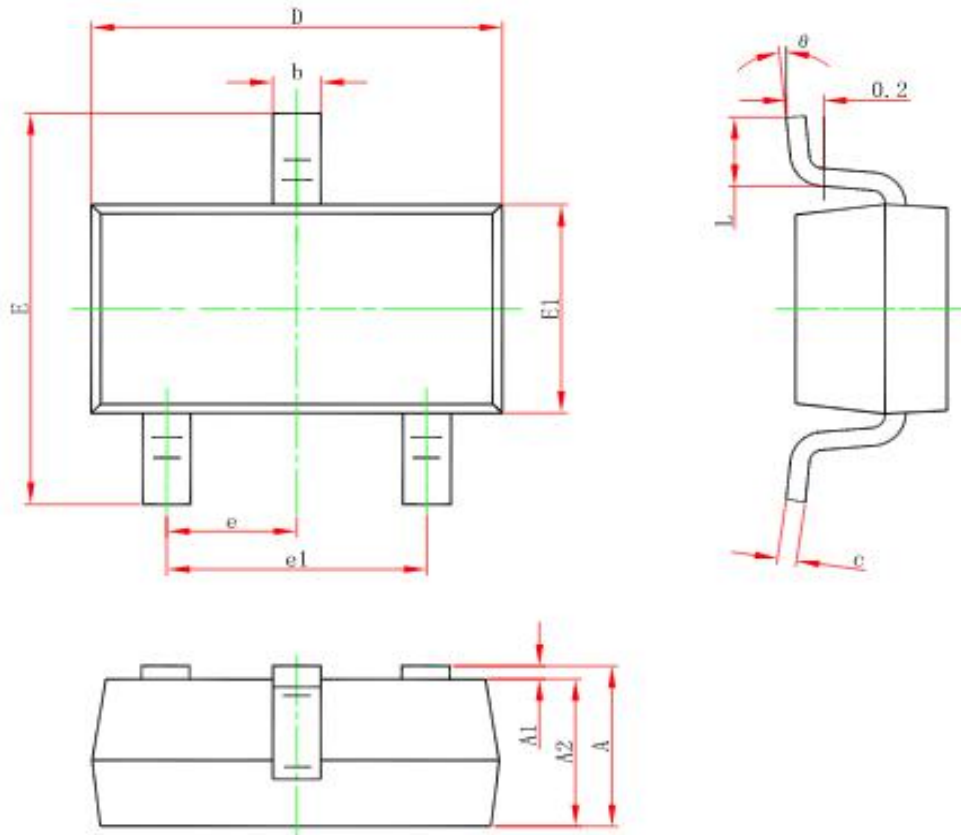
MOSFET ELECTRICAL CHARACTERISTICS

Static Electrical Characteristics (Ta = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	V(BR)DSS	VGS = 0V, ID = -250μA	-30			V
Gate-source threshold voltage	VGS(th)	VDS =VGS, ID = -250μA	-0.6		-1.2	V
Gate-source leakage	IGSS	VDS =0V, VGS = ±12V			±100	nA
Zero gate voltage drain current	IDSS	VDS = -24V, VGS =0V			-1	μA
Drain-source on-state resistancea	RDS(on)	VGS = -10V, ID = -2.6A			115	mΩ
		VGS = -4.5V, ID = -2A		89	140	mΩ
		VGS = -2.5V, ID = -1A		99	170	mΩ
Forward transconductancea	gfs	VDS = -4.5V, ID = -2.6A	3			S
Diode forward voltage	VSD	IS=-1A, VGS=0V		-0.8	-1.3	V
Dynamic						
Input capacitance	Ciss	VDS = 15V,VGS =0V, f=1MHz		409		pF
Output capacitance	Coss			55		pF
Reverse transfer capacitanceb	Crss			42		pF
Total gate charge	Qg	VDS = -15V,VGS = - 4.5V, ID =-2.6A		4.4		nC
Gate-source charge	Qgs			0.8		nC
Gate-drain charge	Qgd			1.3		nC
Gate resistance	Rg	f=1MHz		12		Ω
Switchingb						
Turn-on delay time	td(on)	VDS= -15V RL=4Ω, ID ≈ 1A, VGEN= -4.5V,Rg=3Ω		5.3		ns
Rise time	tr			4.4		ns
Turn-off delay time	td(off)			31.5		ns
Fall time	tf			8		ns
Drain-source body diode characteristics						
Continuous Source-Drain Diode Current	IS	Tc=25℃			-1.3	A
Pulsed Diode forward Curren	ISM				-20	A

Note :

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test : Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.

SOT-23-3L PACKAGE OUTLINE DIMENSIONS


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	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
E1	1.500	1.700	0.059	0.067
E	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°

Typical Characteristics:

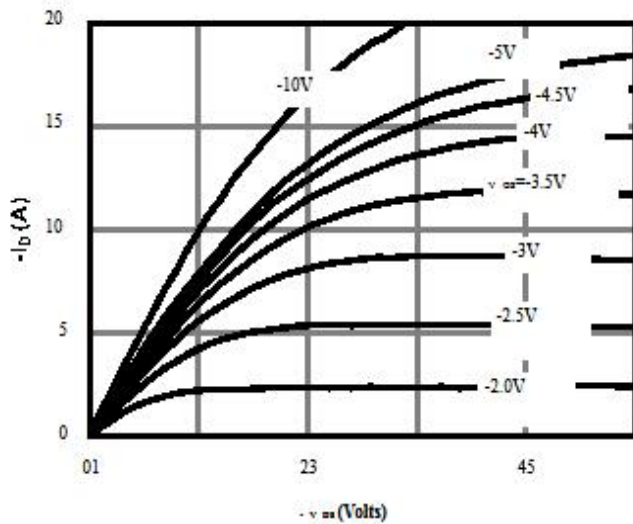


Fig 1: On-Region Characteristics

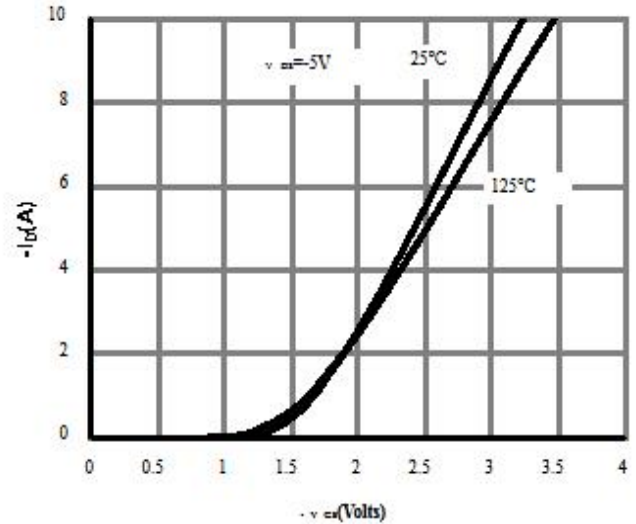


Figure 2: Transfer Characteristics

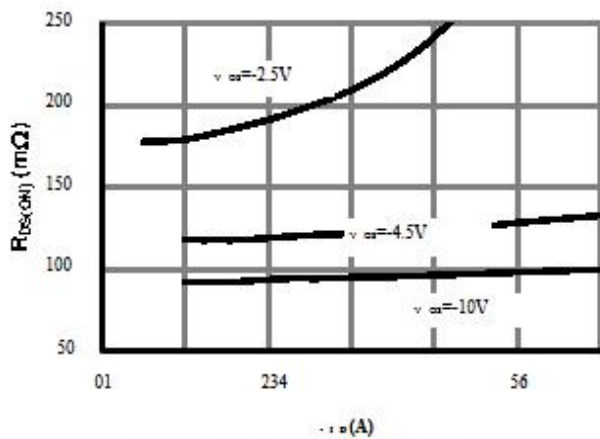


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

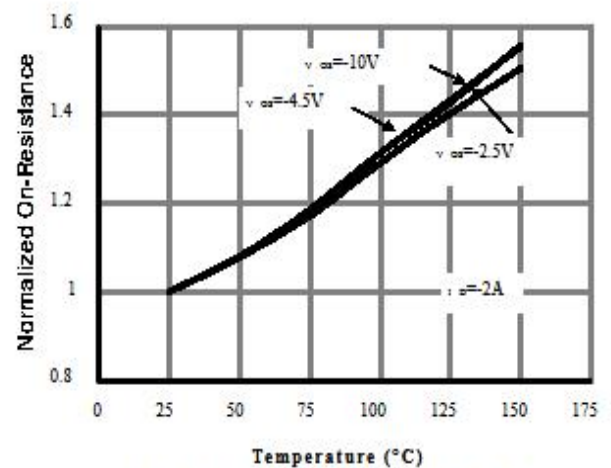


Figure 4: On-Resistance vs. Junction Temperature

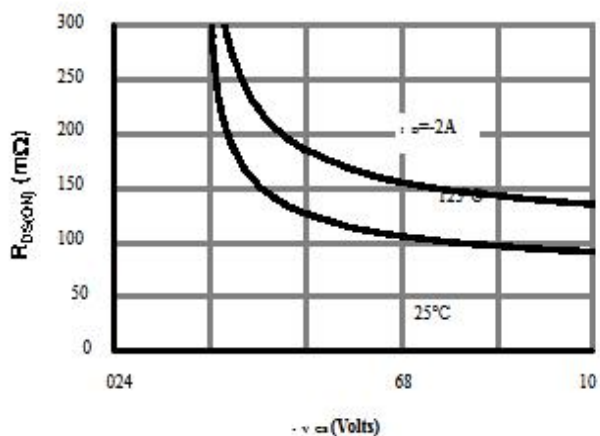


Figure 5: On-Resistance vs. Gate-Source Voltage

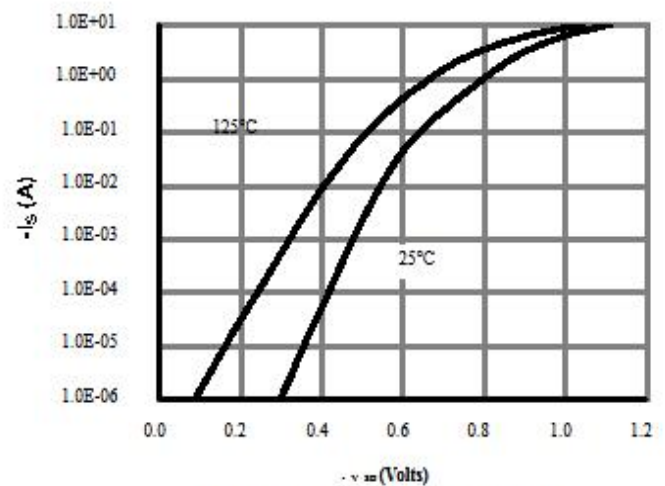


Figure 6: Body-Diode Characteristics

Typical Characteristics:

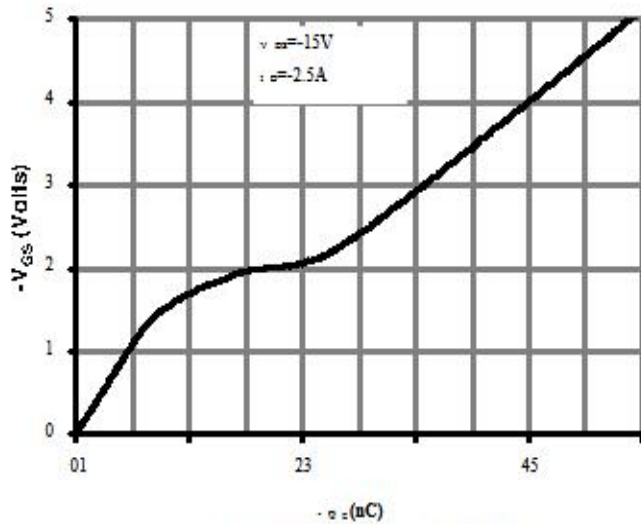


Figure 7: Gate-Charge Characteristics

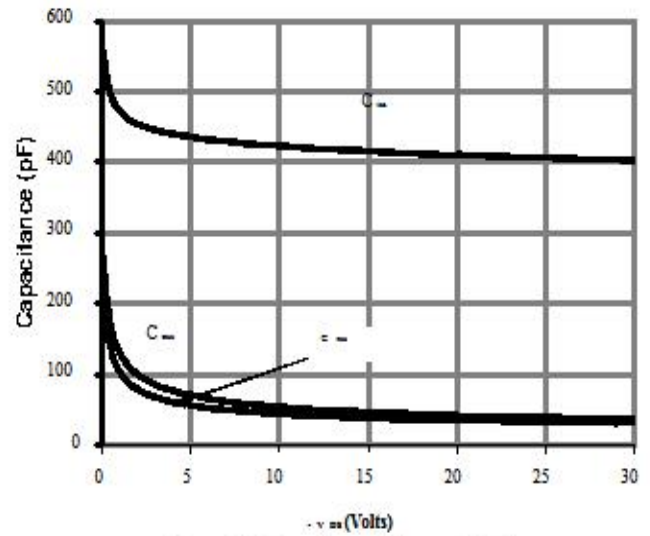


Figure 8: Capacitance Characteristics

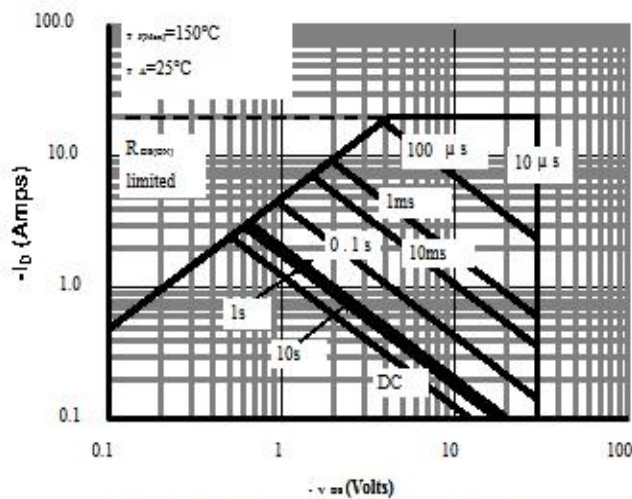


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

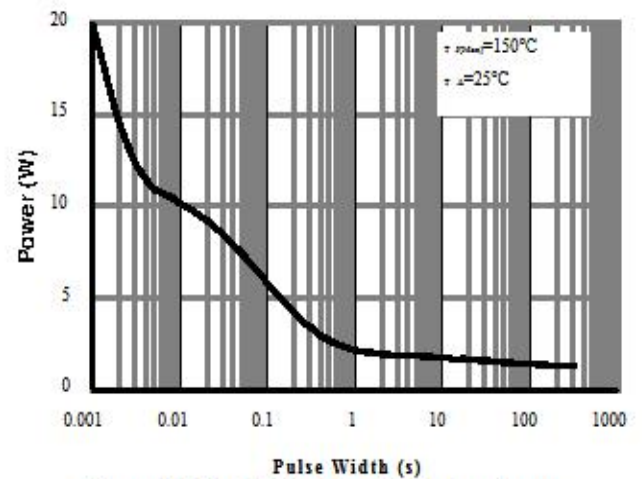


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

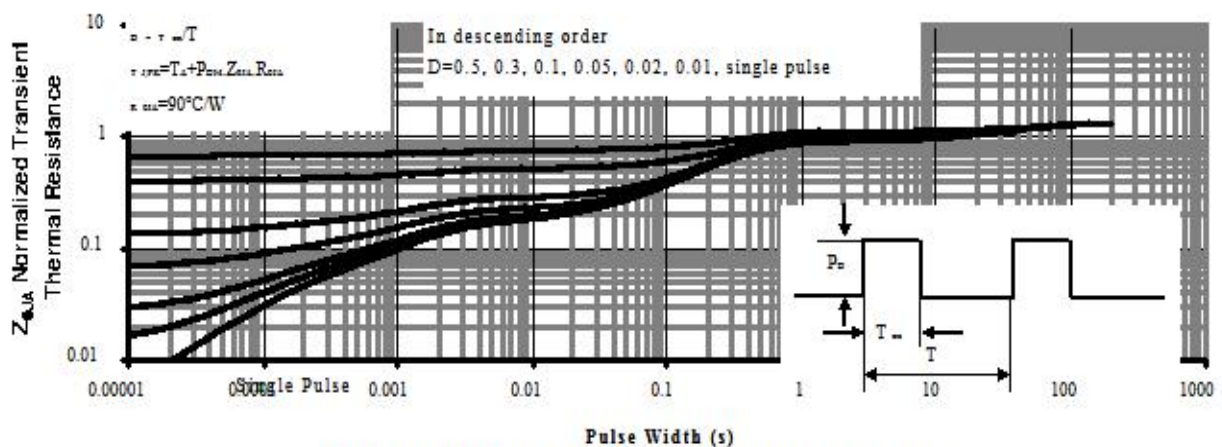


Figure 11: Normalized Maximum Transient Thermal Impedance