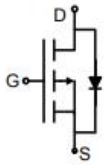
P-channel Enhancement Mode Power MOSFET

General Features

- VDS = -17V,ID = -2.4A

  RDS(ON) ： 110mΩ @ VGS=-2.5V

  RDS(ON) ： 79mΩ @ VGS=-4.5V



Schematic diagram

- High power and current handing capability
- Lead free product is acquired
- Surface mount package



SOT-23 top view

Application

- PWM applications
- Load switch

Absolute Maximum Ratings (TA=25℃ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	-17	V
V_{GS}	Gate-Source voltage	±10	V
I_D	Drain current	-2.4	A
I_{DM}	Drain Current -Pulsed (Note 1)	-10	A
P_D	Power Dissipation	0.89	W
Tj	Junction Temperature	150	℃
Tstg	Storage Temperature	-55-150	℃

Thermal Characteristic

RθJA	Thermal Resistance,Junction-to-Ambient (Note 2)	115	℃/W

ELECTRICAL CHARACTERISTICS (TA=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=-250uA	-17			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-17V, V_{GS}=0V			-1	uA
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±10V			±100	nA

On Characteristics (Note 3)						
Gate-Threshold Voltage	Vth(GS)	V_{DS}= V_{GS}, I_D=-250 uA	-0.4		-1.0	V
Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D=-2.5A		79	100	mΩ
		V_{GS}=-2.5V, I_D=-1.5A		110	140	mΩ
Forward Trans conductance	Gfs	V_{DS}=-5.0V, I_D=-2.0A	4			s
Dynamic Characteristics (Note4)						
Input Capacitance	Ciss	V_{DS}=-10.0V, V_{GS}=0V, f=1MHz		188		pF
Output Capacitance	Coss			26		
Reverse Transfer Capacitance	Crss			17		
Switching Characteristics (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	V_{DS}=-10.0V, I_D=1.0A , V_{GS}=-4.5V,R_{GEN}=3Ω		8.2		nS
Turn-on Rise Time	t_r			23		nS
Turn-off Delay Time	$t_{d(off)}$			22.8		nS
Turn-off Fall Time	t_f			25.6		nS
Total Gate Charge	Q_g	V_{DS}=-10.0V, I_D=-2.4A, V_{GS}=-4.5V,		5.3		nC
Gate-Source Charge	Q_{gs}			1.6		nC
Gate-Drain Charge	Q_{gd}			1.7		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage(Note 3)	V_{SD}	V_{GS}=0V, I_D=-2.4A			-1.2	V
Diode Forward Current(Note 2)	Is				-2.4	A

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production

Typical Characteristics

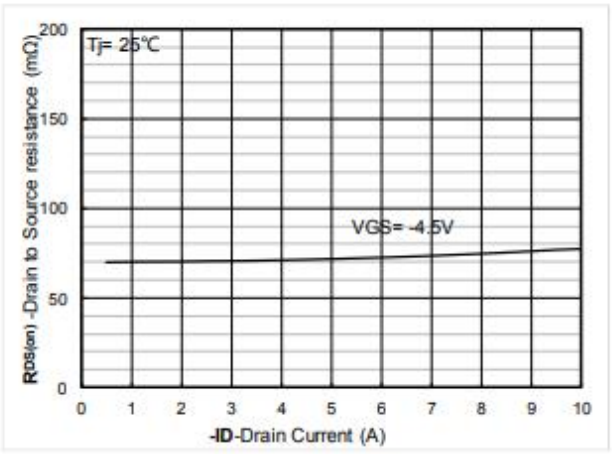


Figure 7. $R_{DS(on)}$ VS Drain Current

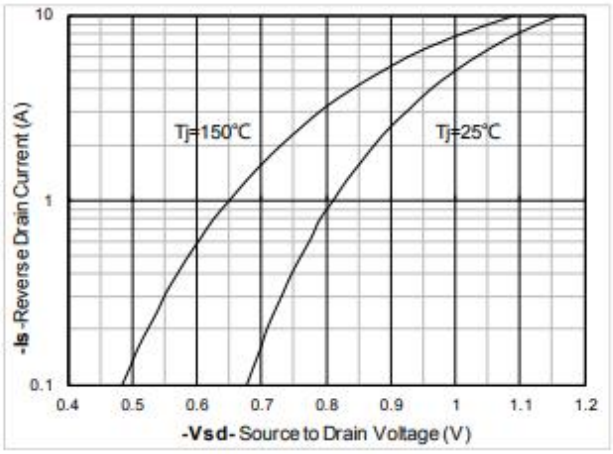


Figure 8. Forward characteristics of reverse diode

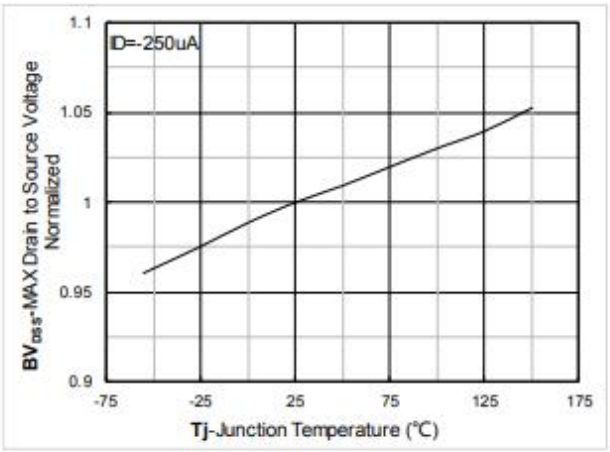


Figure 9. Normalized breakdown voltage

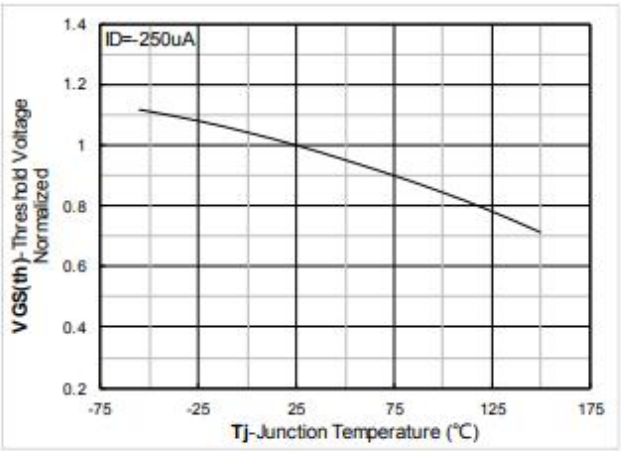


Figure 10. Normalized Threshold voltage

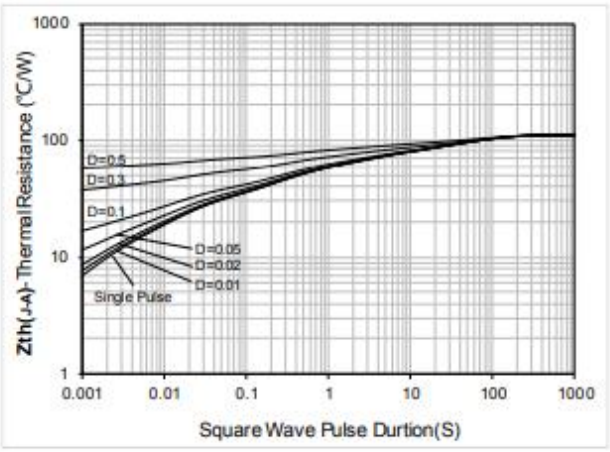


Figure 11. Maximum Transient Thermal Impedance

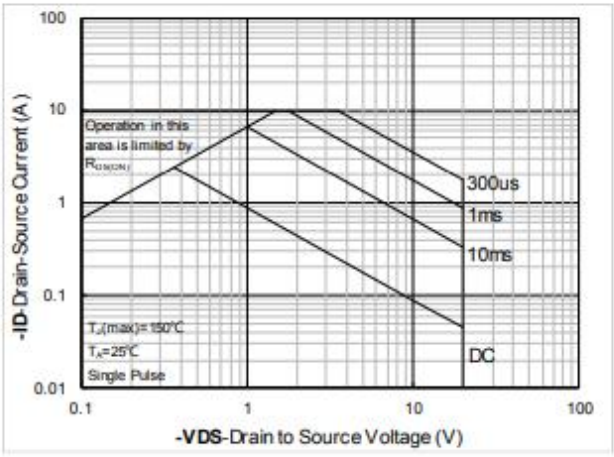
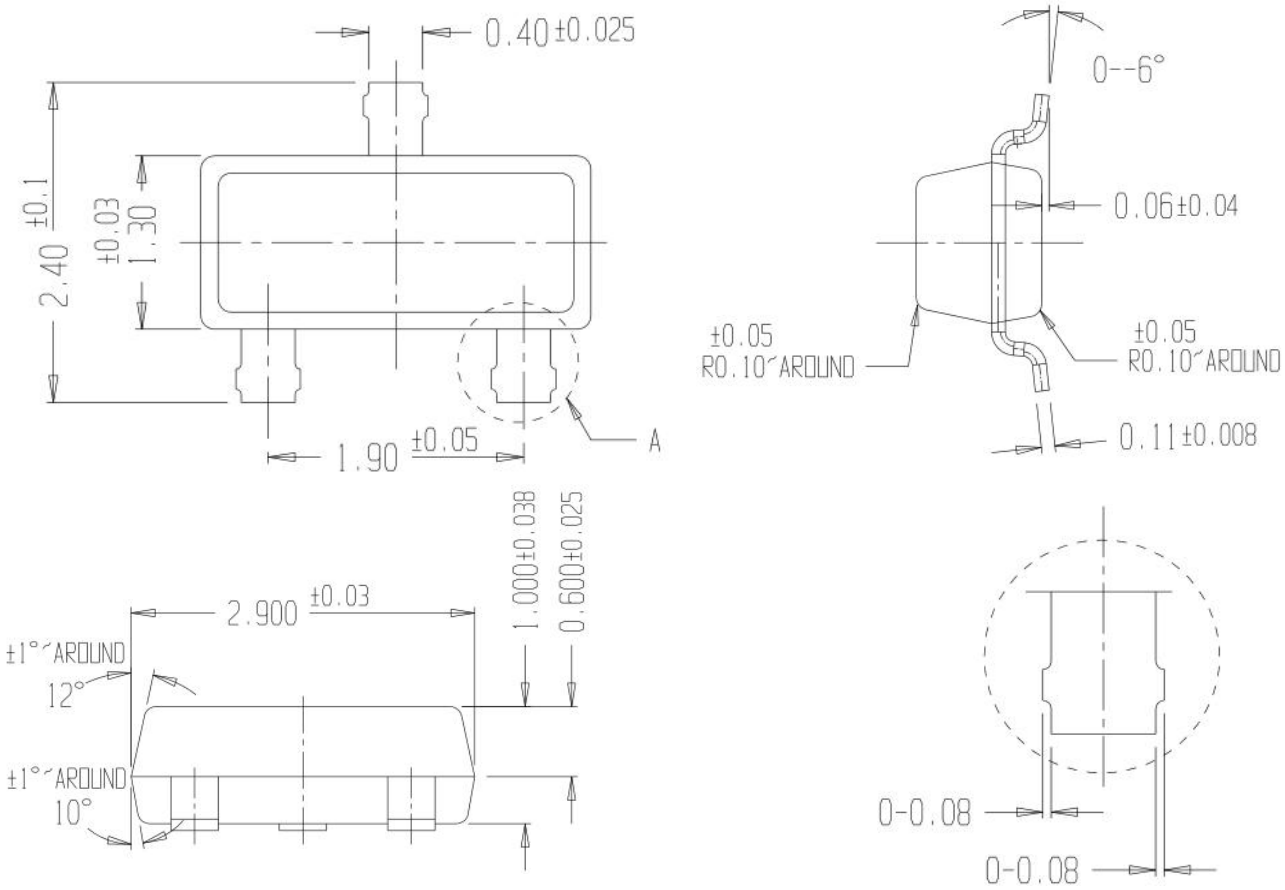


Figure 12. Safe Operation Area

SOT-23 Package information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	0.962	1.038	0.038	0.040
A1	0.575	0.625	0.023	0.025
b	0.40	0.60	0.016	0.024
c	0.08	0.15	0.003	0.06
D	2.87	2.93	0.113	0.115
E	1.27	1.33	0.05	0.052
E1	2.3	2.5	0.090	0.098
e 1	1.85	1.95	0.073	0.077
L	0.31	0.44	0.012	0.017
L1	0.50	0.60	0.020	0.024
e	0.02	0.1	0.000	0.004