

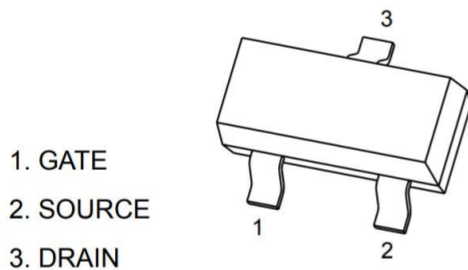
Product Summary

- V_{DS} -25 V
- I_{DS} (at $V_{GS}=-4.5V$) -0.66 A
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) <520m Ω

Application

- Interfacing Switching
- Portable equipment and battery
- Load Switch

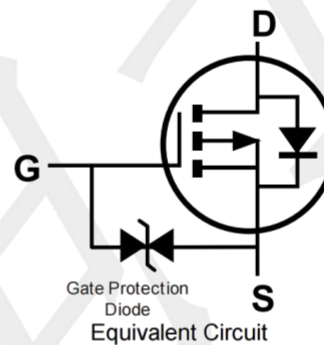
Package and Pin Configuration



SOT-323

Marking:PA1

Circuit diagram



Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	-25	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	-0.66	A
Pulsed Drain Current	I_{DM}	-2.4	A
Maximum Power Dissipation	P_D	0.5	W
Operating Junction Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C

Thermal Characteristic

PARAMETER	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient(t≤10s)	$R_{\theta JA}$	300	°C/W

Note : When mounted on 1" square PCB (FR4 material).

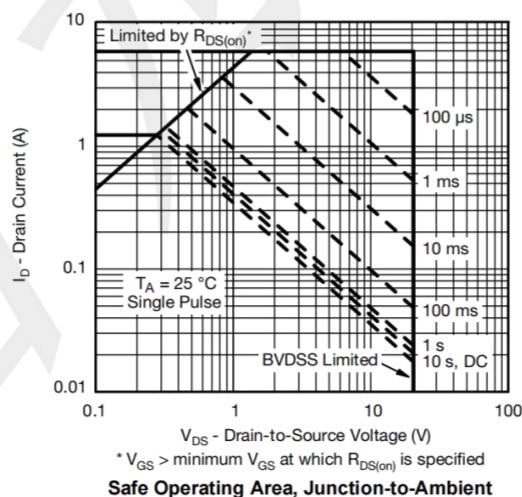
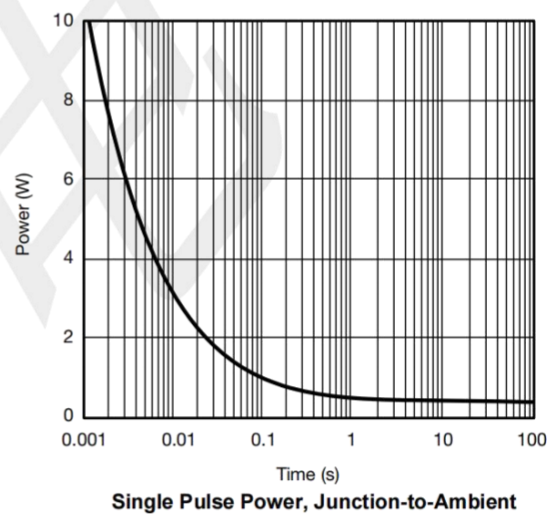
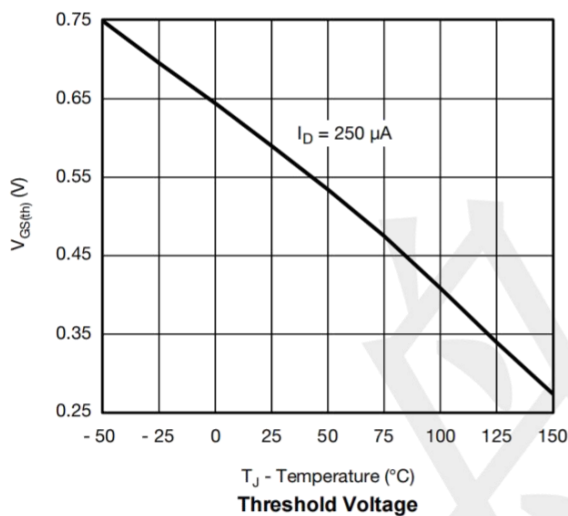
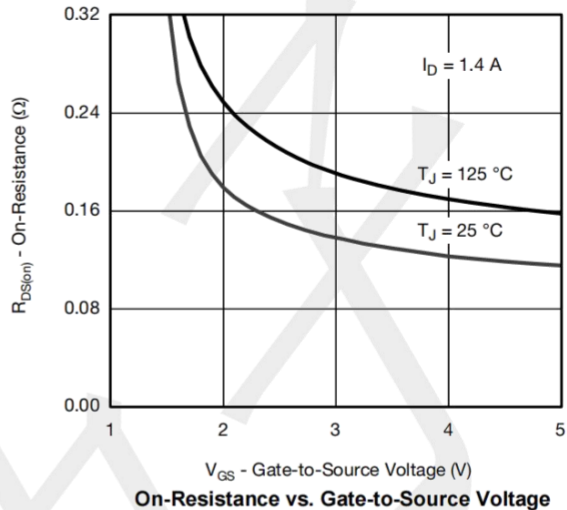
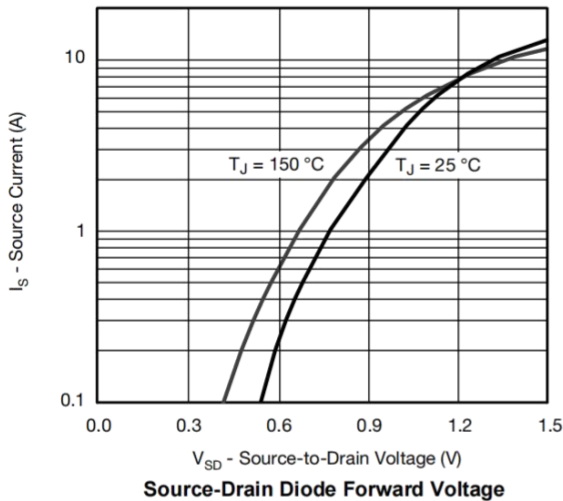
Electrical Characteristics (T_A=25 °C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D = -250μA	BV _{DSS}	-25	--	--	V
Gate-Source Threshold Voltage	V _{DS} =V _{GS} , I _D = -250μA	V _{GS(th)}	-0.5	-0.9	-1.5	V
Gate-Source Leakage	V _{DS} =0V, V _{GS} = ±10V	I _{GSS}	--	--	±100	nA
Zero Gate Voltage Drain Current	V _{DS} = -25V, V _{GS} =0V	I _{DSS}	--	-0.1	-1	μA
	V _{DS} = -25V, T _J =125°C		--	-10	-100	μA
Drain-Source On-State Resistance (Note 1)	V _{GS} = -4.5V, I _D = -1.0A	R _{DS(on)}	--	--	520	mΩ
	V _{GS} = -2.5V, I _D = -0.8A		--	--	700	
	V _{GS} = -1.5V, I _D = -0.5A		--	950	--	
Forward Transconductance (Note 2)	V _{DS} = -10V, I _D = -0.54A	g _{fs}	--	1.2	--	S
Dynamic (Note 2)						
Total Gate Charge (Note 3)	V _{DS} = -10V, I _D = -0.5A, V _{GS} = -4.5V	Q _g	--	2.7	--	nC
Gate-Source Charge (Note 3)		Q _{gs}	--	0.7	--	
Gate-Drain Charge (Note 3)		Q _{gd}	--	1.0	--	
Input Capacitance	V _{DS} = -10V, V _{GS} = 0V, F = 1.0MHz	C _{iss}	--	113	--	pF
Output Capacitance		C _{oss}	--	15	--	
Reverse Transfer Capacitance		C _{rss}	--	9	--	
Switching						
Turn-On Delay Time (Note 3)	V _{DS} = -10V, I _D = -0.5A, V _{GS} = -4.5V, R _{GEN} = 10Ω	t _{d(on)}	--	9	--	nS
Rise Time (Note 3)		t _r	--	5.8	--	
Turn-Off Delay Time (Note 3)		t _{d(off)}	--	32	--	
Fall Time (Note 3)		t _f	--	20	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	V _{GS} = 0V, I _F = -0.6A	V _{SD}	--	-0.8	-1.2	V
Continuous Source Current	Integral reverse diode in the MOSFET	I _S	--	--	-0.6	A
Pulsed Current (Note 1)		I _{SM}	--	--	-2.4	A

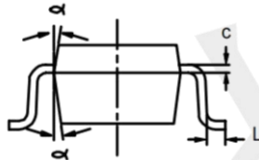
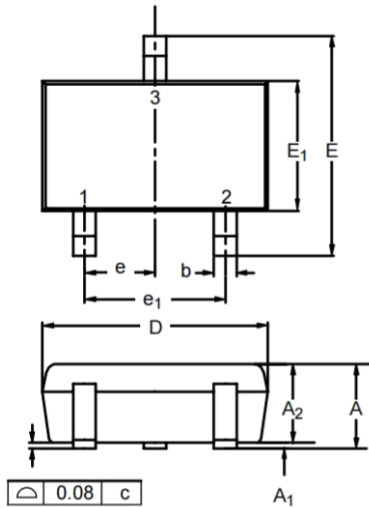
Notes:

1. Pulse test; pulse width ≤ 300 μS, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



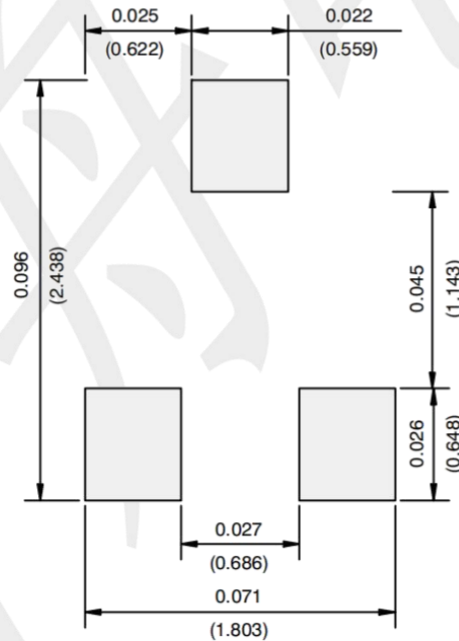
Package Information SOT-323



Dim	MILLIMETERS			INCHES		
	Min	Nom	Max	Min	Nom	Max
A	0.90	—	1.10	0.035	—	0.043
A ₁	—	—	0.10	—	—	0.004
A ₂	0.80	—	1.00	0.031	—	0.039
b	0.25	—	0.40	0.010	—	0.016
c	0.10	—	0.25	0.004	—	0.010
D	1.80	2.00	2.20	0.071	0.079	0.087
E	1.80	2.10	2.40	0.071	0.083	0.094
E ₁	1.15	1.25	1.35	0.045	0.049	0.053
e	0.65BSC			0.026BSC		
e ₁	1.20	1.30	1.40	0.047	0.051	0.055
L	0.10	0.20	0.30	0.004	0.008	0.012
α	7°Nom			7°Nom		

ECN: S-03946—Rev. C, 09-Jul-01
DWG: 5549

Suggested Pad Layout



Recommended Minimum Pads
Dimensions in Inches/(mm)