



20V N-Channel MOSFETs

General Description

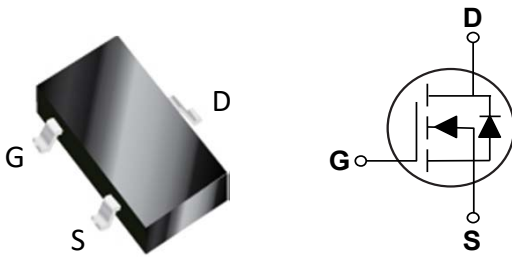
These N-Channel enhancement mode power field effect transistors are using trench DMOS technology. This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficiency fast switching applications.

BV_{DSS}	$R_{DS(ON)}$	I_D
20 V	80 mΩ	2 A

Features

- $R_{DS(ON)} \leq 80m\Omega @ V_{GS}=4.5V$
- Ultra low On-Resistance
- Fast switching
- Green Device Available

SOT-323 Pin Configuration



Applications

- Portable Equipment
- Load Switch
- Battery Protection

Absolute Maximum Ratings $T_c=25^\circ C$ unless otherwise noted

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	± 12	V
I_D	Drain Current - Continuous ($T_A=25^\circ C$)	2	A
I_{DM}	Drain Current - Pulsed (NOTE 1)	4.8	A
P_D	Power Dissipation ($T_A=25^\circ C$)	0.2	W
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ C$
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ C$
Marking Code		A	

Thermal Characteristics

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	---	500	$^\circ C/W$



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

Off Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	20	---	---	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =16V, V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±12V, V _{DS} =0V	---	---	±100	nA

On Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =4.5V, I _D =0.5A	---	---	80	mΩ
		V _{GS} =2.5V, I _D =0.5A	---	---	90	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	0.5	---	1	V

Dynamic and switching Characteristics (NOTE 3)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
T _{d(on)}	Turn-On Delay Time	V _{DS} =10V, V _{GS} =10V, R _{GEN} =6Ω, I _D =1A	---	3.2	---	nS
T _r	Rise Time		---	2.6	---	
T _{d(off)}	Turn-Off Delay Time		---	10	---	
T _f	Fall Time		---	5	---	
C _{ISS}	Input Capacitance	V _{DS} =10V, V _{GS} =0V, F=1MHz	---	123	---	pF
C _{OSS}	Output Capacitance		---	30	---	
C _{RSS}	Reverse Transfer Capacitance		---	26	---	
R _g	Gate resistance	V _{GS} =0V, V _{DS} =0V, F=1MHz	---	1.3	---	Ω

Drain-Source Diode Characteristics and Ratings

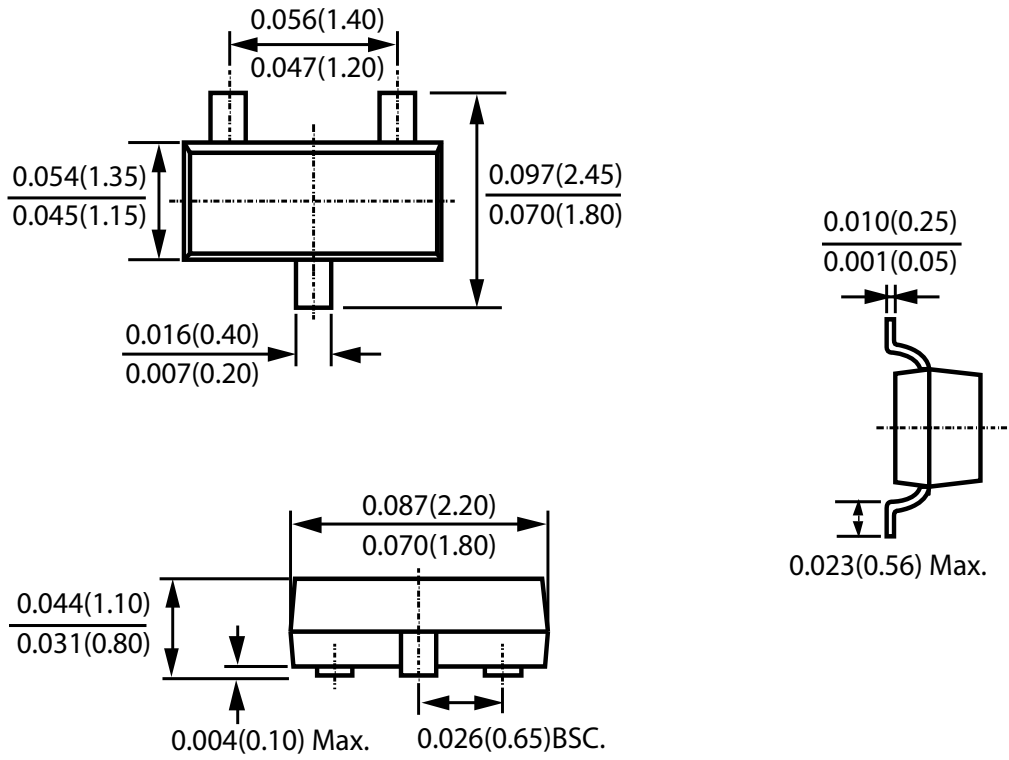
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =0.5A	---	---	1.3	V

NOTES :

1. Repetitive Rating : Pulsed width limited by maximum junction temperature.
2. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%.
3. Guaranteed by design, not subject to production testing.



Package Outline Dimensions



SOT-323

Dimensions in inches and (millimeters)



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