N-Channel Enhancement Mode Field Effect Transistor

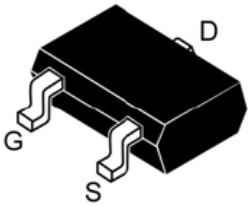
Features

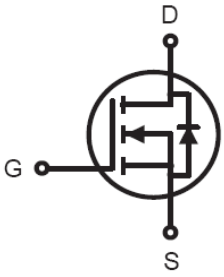
20V/0.8A,RDS(ON)=360m_@VGS=4.5V
20V/0.7A,RDS(ON)=420m_@VGS=2.5V
20V/0.6A,RDS(ON)=560m_@VGS=1.8V
Advanced trench process technology
High-density cell design for ultra low on-resistance
Compact and low profile SOT723 package

General Description

This N-Channel enhancement mode power FETs are produced with high cell density, DMOS trench technology, which is especially used to minimize on-state resistance. This device is particularly suited for low voltage application such as portable equipment, power management and other battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount package. Excellent thermal and electrical capabilities.

Pin Configurations





SOT723

Absolute Maximum Ratings @T_A=25℃ unless otherwise noted

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DSS}	20	V
Gate-Source Voltage		V_{GSS}	±12	V
Drain Current	Continuous	I_D	0.7	A
	Pulsed		10	
Power Dissipation		P_D	350	mW
Operating and Storage Junction Temperature Range		T_J, T_{STG}	-55 to +150	°C

- Electrical Characteristics @T_A=25℃ unless otherwise noted

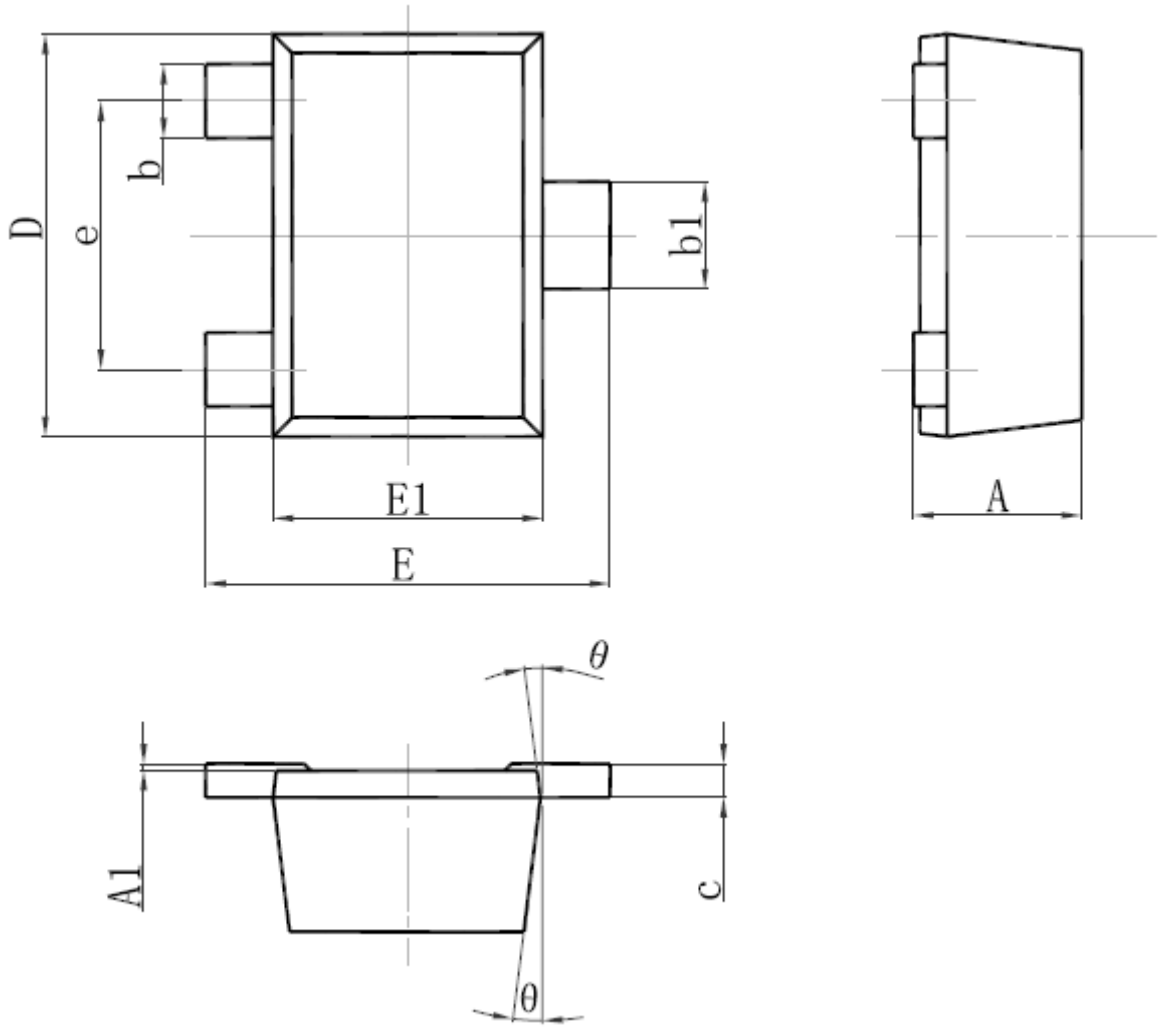
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 10uA	20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 20 V, V_{GS} = 0 V	--	--	1	uA
Gate–Body Leakage	I_{GSS}	V_{GS} = ±8 V, V_{DS} = 0 V	--	--	±100	nA
ON CHARACTERISTICS(1)						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 50uA	0.4	0.75	1.2	V
Static Drain–Source On-Resistance	$R_{DS(on)}$	V_{GS} = 4.5 V, I_D = 0.65 A	--	360	--	mΩ
		V_{GS} = 2.5 V, I_D = 0.55 A	--	420	--	
		V_{GS} = 2.5 V, I_D = 0.50 A	--	560	--	
Forward Transconductance	g_{FS}	V_{DS} = 5 V, I_D = 3.6 A	2	7.7	14	S
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	V_{DS} = 10 V, V_{GS} = 0 V, f = 1.0 MHz	--	55	--	pF
Output Capacitance	C_{oss}		--	10	--	
Reverse Transfer Capacitance	C_{rss}		--	6	--	
SWITCHING CHARACTERISTICS						
Turn–On Delay Time	$t_{d(on)}$	V_{DD} = 5 V, I_D = 3.6A, V_{GS} =4.5 V,R_{GEN}=6Ω	--	--	15	nS
Turn–On Rise Time	t_r		--	--	20	
Turn–Off Delay Tim	$t_{d(off)}$		--	--	60	
Turn–Off Fall Time	t_f		--	--	25	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Diode Forward Voltage(1)	V_{SD}	V_{GS} = 0 V, I_S = 1.1 A	0.6	0.8	1.15	V

Notes :

(1).Pulse Test : Pulse Width < 300μs, Duty Cycle < 2%.

(2).Surface Mounted on FR4 Board, t < 10 sec.

SOT723 PACKAGE



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A		0.500		0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c		0.150		0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	