

BSS84

P-Channel 20-V (D-S) MOSFET

Description

These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $r_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

Features

- Low $r_{DS(on)}$ provides higher efficiency and extends battery life
- Low thermal impedance copper lead frame
- SOT-23 saves board space
- Fast switching speed
- High performance trench technology
- RoHS compliant package

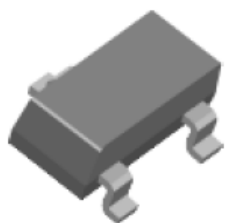
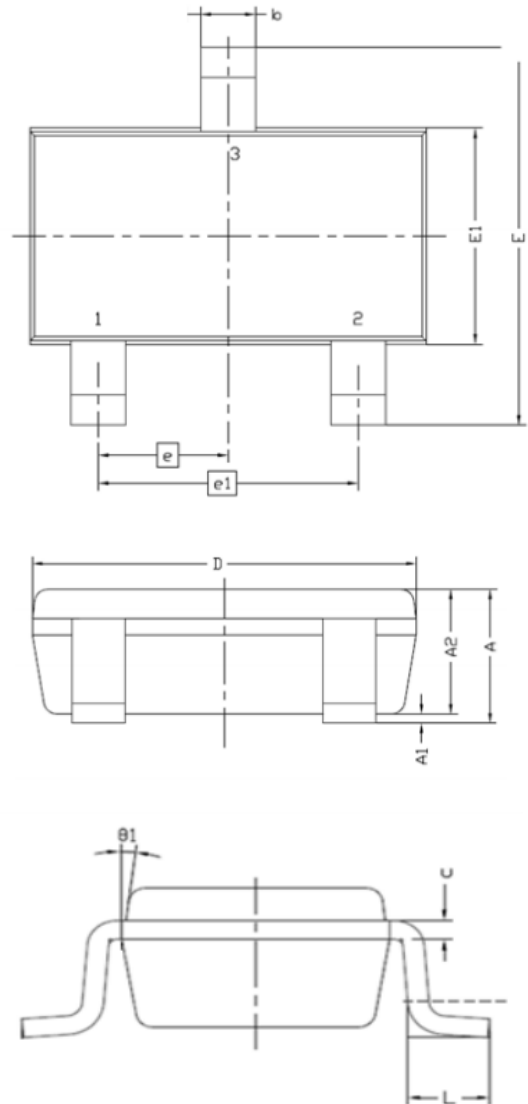
Application

DC-DC converters, load switching, power management in portable and battery-powered products such as computers, printers, cellular and cordless telephones.

Package type : SOT-23

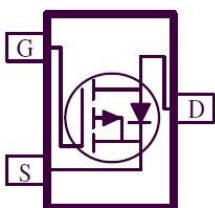
Packing & Order Information

3,000/Reel



**RoHS
COMPLIANT**

Graphic symbol



Symbol	MILLIMETERS	
	MIN	MAX
A	0.8	1.2
A1	0	0.1
A2	0.7	1.1
b	0.3	0.5
c	0.1	0.2
D	2.7	3.1
E	2.6	3
E1	1.4	1.8
e	0.95 BSC	
e1	1.9 BSC	
L	0.3	0.6
θ1	7° NOM	

BSS84

P-Channel 20-V (D-S) MOSFET

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings (Tc=25°C unless otherwise specified)

Symbol	Parameter	Value	Unit
V _{DS}	Drain to Source Voltage	-50	V
V _{GS}	Gate to Source Voltage	±20	V
I _D	Continuous Drain Current	-0.13	A
I _{DM}	Pulsed Drain Current (note 1) @tp <10 μs	-0.52	A
P _D	Power Dissipation	225	mW
R _{θJA}	Thermal Resistance from Junction to Ambient (note 2)	556	°C/W
T _J	Junction Temperature	150	°C
T _{STG}	Storage Temperature	-55 to +150	°C
TL	Maximum Lead Temperature for Soldering Purposes, Duration for 5 Seconds	260	°C

Static Characteristics

Symbol	Parameter	Test Conditions	Min	Typ.	Max.	Units
V _{GS(th)}	Gate-Threshold Voltage (note 3)	V _{DS} = V _{GS} , I _D = -250μA	-0.9		-2	V
I _{GSS}	Gate-Body Leakage	V _{DS} = 0 V, V _{GS} = ±20 V			±5	μA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -50 V, V _{GS} = 0 V V _{DS} = -25 V, V _{GS} = 0 V			-15 -0.1	μA
V _{(BR)DSS}	Drain-source breakdown voltage	V _{DS} = 0 V, I _D = -250μA	-50			V
R _{DS(on)}	Drain-source on-resistance (note 3)	V _{GS} = -5 V, I _D = -0.1 A V _{GS} = -10 V, I _D = -0.1 A			10 8	Ω
g _{fs}	Forward transconductance (note 1)	V _{DS} = -25 V, I _D = -100 mA	50			mS

Switching Characteristics (note 4)

Symbol	Parameter	Test Conditions	Min	Typ.	Max.	Units
t _{d(on)}	Turn-On Delay Time	V _{DD} = -15 V, R _L = 50 Ω I _D = -2.5 A	--	2.5	--	ns
t _r	Rise Time		--	1	--	ns
t _{d(off)}	Turn-Off Delay Time		--	16	--	ns
t _f	Fall Time		--	8	--	ns

Dynamic Characteristics (note 4)

Symbol	Parameter	Test Conditions	Min	Typ.	Max.	Units
C _{ISS}	Input Capacitance	V _{DS} = 5 V, f = 1MHz V _{GS} = 0 V	--	30	--	pF
C _{OSS}	Coss Output Capacitance		--	10	--	pF
C _{RSS}	Crss Reverse Transfer Capacitance		--	5	--	pF

BSS84

P-Channel 20-V (D-S) MOSFET

Source-Drain Diode Characteristics

Symbol	Parameter	Test Conditions	Min	Typ.	Max.	Units
I_S	Continuous Current		--	--	-0.13	A
I_{SM}	Pulsed Current		--	--	-0.52	
V_{SD}	Diode forward voltage (note 3)	$I_S = -0.13 \text{ A}, V_{GS} = 0 \text{ V}$	--	--	-2.2	V

Notes :

1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board , $t \leq 10s$.
3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to producing.

BSS84

P-Channel 20-V (D-S) MOSFET

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE

WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Bruckewell Technology Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Bruckewell"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Bruckewell makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Bruckewell disclaims

- (i) Any and all liability arising out of the application or use of any product.
- (ii) Any and all liability, including without limitation special, consequential or incidental damages.
- (iii) Any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Bruckewell's knowledge of typical requirements that are often placed on Bruckewell products in generic applications.

Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time.

Product specifications do not expand or otherwise modify Bruckewell's terms and conditions of purchase, including but not limited to the warranty expressed therein.