

Description

The BSS84A is the high cell density trenched P-ch MOSFETs, which provides excellent R_{DS(ON)} and efficiency for most of the small power switching and load switch applications.

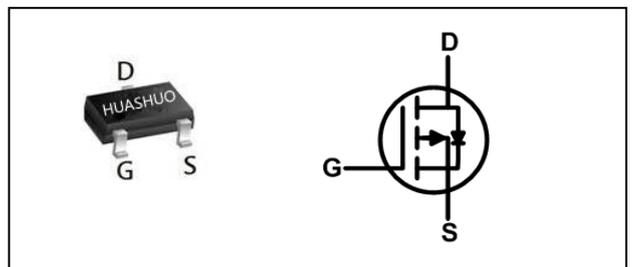
The BSS84A meet the RoHS and Green Product requirement with full function reliability approved.

- 100% EAS Guaranteed
- Green Device Available
- Super Low Gate Charge
- Excellent CdV/dt effect decline
- Advanced high cell density Trench technology

Product Summary

V _{DS}	-50	V
R _{DS(ON),max}	1.8	Ω
I _D	-0.2	A

SOT23 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	-50	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _A =25°C	Continuous Drain Current, V _{GS} @ -10V ¹	-0.2	A
I _D @T _A =100°C	Continuous Drain Current, V _{GS} @ -10V ¹	-0.14	A
I _{DM}	Pulsed Drain Current ²	-0.8	A
P _D @T _A =25°C	Total Power Dissipation ³	0.7	W
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance Junction-Ambient ¹	---	400	°C/W



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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-50	---	---	V
ΔBV _{DSS} /ΔT _J	BV _{DSS} Temperature Coefficient	Reference to 25°C, I _D =-1mA	---	-0.021	---	V/°C
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =-10V, I _D =-0.2A	---	1.2	1.8	Ω
		V _{GS} =-4.5V, I _D =-0.1A	---	1.4	2.8	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =-250uA	-1.0	-1.5	-2.0	V
ΔV _{GS(th)}	V _{GS(th)} Temperature Coefficient		---	4.08	---	mV/°C
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-48V, V _{GS} =0V, T _J =25°C	---	---	1	uA
		V _{DS} =-48V, V _{GS} =0V, T _J =55°C	---	---	10	
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =-20V, I _D =-0.2A	---	0.06	---	S
Q _g	Total Gate Charge (-4.5V)	V _{DS} =-20V, V _{GS} =-10V, I _D =-0.2A	---	1.5	---	nC
Q _{gs}	Gate-Source Charge		---	0.7	---	
Q _{gd}	Gate-Drain Charge		---	0.3	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =-15V, V _{GS} =-10V, R _G =50Ω, I _D =-0.2A	---	2.1	---	ns
T _r	Rise Time		---	1.1	---	
T _{d(off)}	Turn-Off Delay Time		---	15	---	
T _f	Fall Time		---	9	---	
C _{iss}	Input Capacitance	V _{DS} =-5V, V _{GS} =0V, f=1MHz	---	23	---	pF
C _{oss}	Output Capacitance		---	7.3	---	
C _{rss}	Reverse Transfer Capacitance		---	4	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current ^{1,4}	V _G =V _D =0V, Force Current	---	---	-0.3	A
I _{SM}	Pulsed Source Current ^{2,4}		---	---	-1	A
V _{SD}	Diode Forward Voltage ²	V _{GS} =0V, I _S =-1A, T _J =25°C	---	-0.8	-2.2	V

Note :

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%
- 3.The power dissipation is limited by 150°C junction temperature
- 4.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.



Typical Characteristics

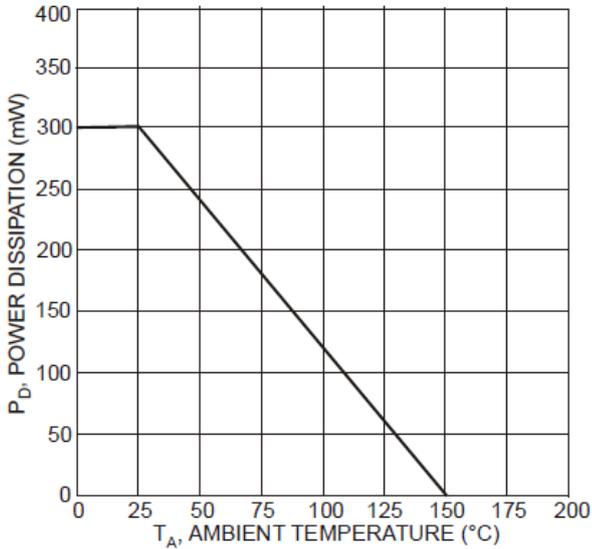


Fig. 1 Max Power Dissipation vs. Ambient Temperature

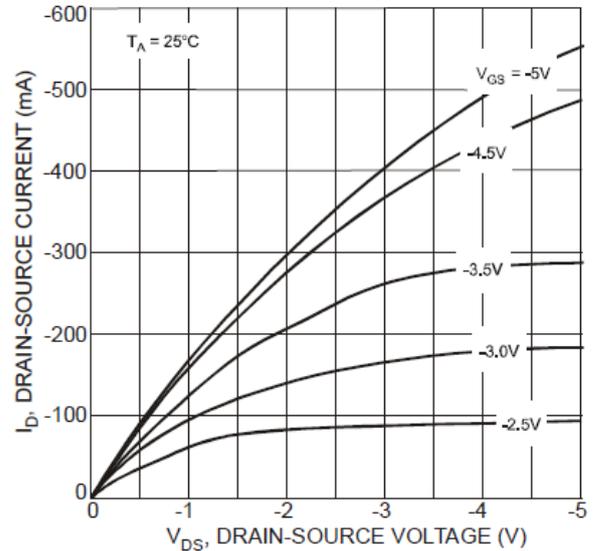


Fig. 2 Drain-Source Current vs. Drain-Source Voltage

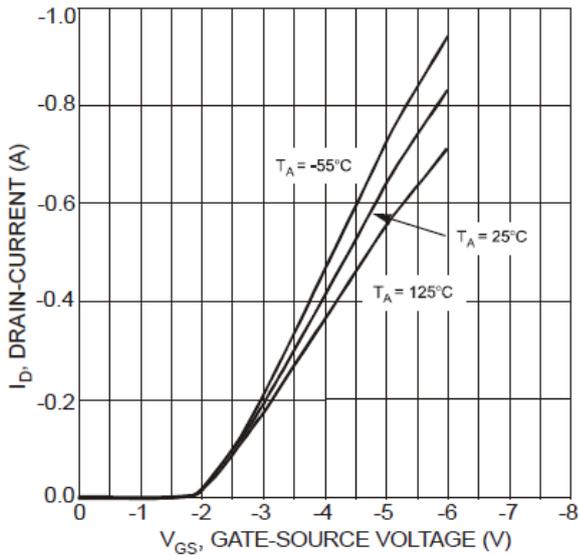


Fig. 3 Drain-Current vs. Gate-Source Voltage

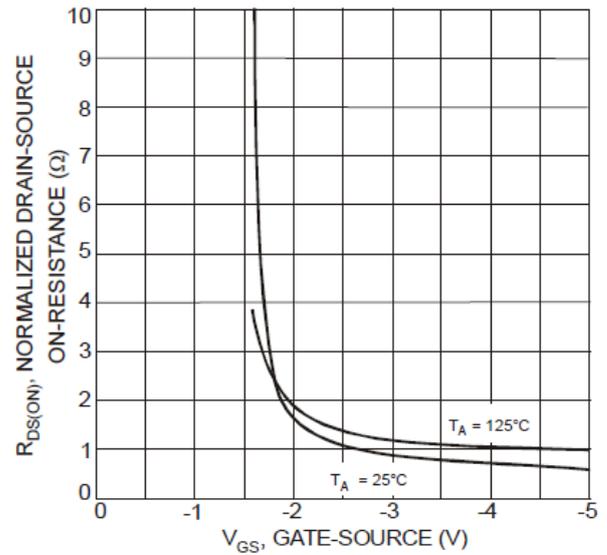


Fig. 4 On-Resistance vs. Gate-Source Voltage

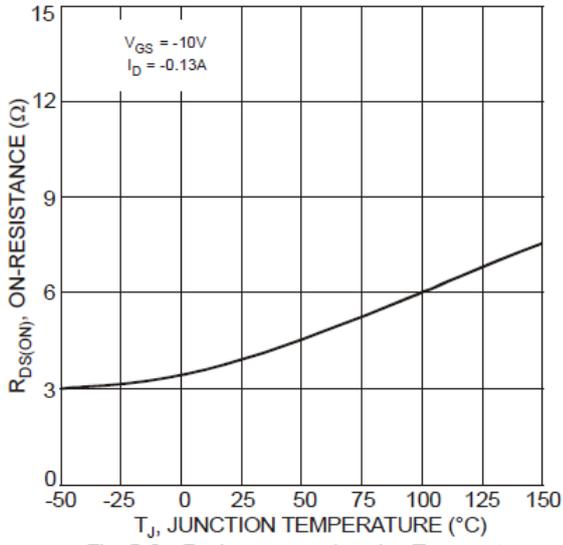


Fig. 5 On-Resistance vs. Junction Temperature

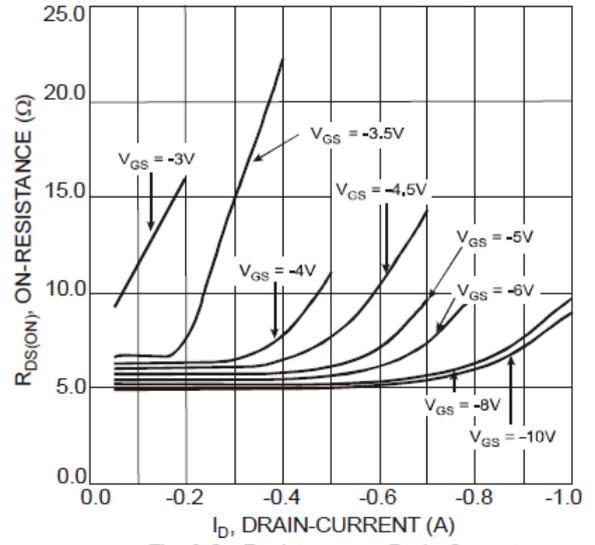
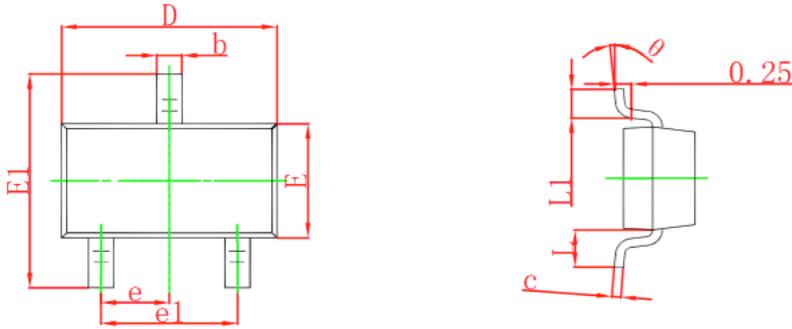


Fig. 6 On-Resistance vs. Drain-Current

Ordering Information

Part Number	Package code	Packaging
BSS84A	SOT-23	3000/Tape&Reel



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

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