

FEATURES

- Trench Power LV MOSFET technology
- High density cell design for Low $R_{DS(on)}$
- High Speed switching



Product Summary		
V_{DS}	$R_{DS(on)}$ (m Ω) Typ	I_D (A)
-60V	8.0 @ -10V	-0.17
	10.0 @ -4.5V	

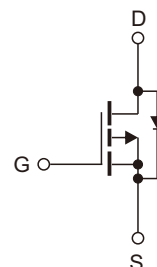
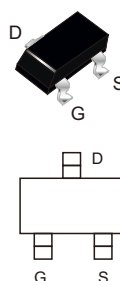
APPLICATIONS

- Battery protection
- Load switch
- Power management

MECHANICAL DATA

- Case: SOT-23(TO-236)
- Terminals: Plated solderable per MIL-STD-750, method 2026
- Mounting Position: Any

SOT-23



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameters		Symbol	Value	Unit
Drain-Source voltage		V_{DS}	-60	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ($T_J = 150^\circ\text{C}$)	$T_A = 25^\circ\text{C}$	I_D	-0.17	A
	$T_A = 70^\circ\text{C}$		-0.14	
Pulsed Drain Current ¹⁾		I_{DM}	-0.68	A
Maximum Power Dissipation @ $T_A=25^\circ\text{C}$		P_D	225	mW
Junction and Storage Temperature Range		T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Thermal Resistance Ratings

Parameters	Symbol	Typ	Max	Unit
Junction to Ambient, Steady State ²⁾	$R_{\theta JA}$	-	556	$^\circ\text{C/W}$

RATINGS AND CHARACTERISTIC OF BSS84

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

Parameters	Symbol	Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	-60	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V, V _{GS} =0V, T _C =25°C	-	-	-1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V	-	-	±100	nA
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	-0.9	-1.4	-2.0	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} = -10V, I _D =-0.15A	-	-	8.0	Ω
		V _{GS} = -4.5V, I _D =-0.15A	-	-	10.0	
Dynamic						
Input Capacitance	C _{iss}	V _{DS} =-30V, V _{GS} =0V, f=1MHz	-	30	-	pF
Output Capacitance	C _{oss}		-	10	-	
Reverse Transfer Capacitance	C _{rss}		-	5	-	
Turn-on Delay Time	t _{D(on)}	V _{GS} =-4.5V, V _{DD} =-30V, I _D =-0.15A, R _{GEN} =2.5Ω	-	2.5	-	ns
Rise Time	t _r		-	1	-	
Turn-off Delay Time	t _{D(off)}		-	16	-	
Fall Time	t _f		-	8	-	
Drain-Source Body Diode Characteristics						
Maximum Body-Diode Continuous Current	I _S		-	-	-0.17	A
Diode Forward Voltage	V _{SD}	I _S =-0.17A, V _{GS} =0V	-	-	-1.2	V

Notes: 1. Pulse Test: Pulse Width≤300us, Duty cycle ≤2%.
2. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
BSS84	F2	B84.	3000	30000	120000	7" reel

RATINGS AND CHARACTERISTIC OF BSS84

Typical Performance Characteristics

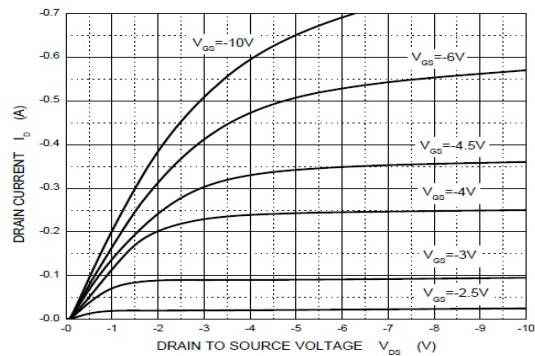


Figure1. Output Characteristics

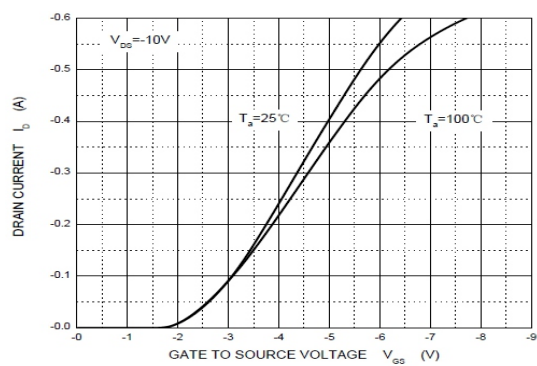


Figure2. Transfer Characteristics

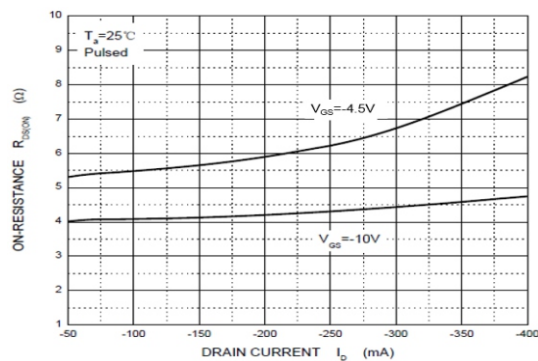


Figure3. Drain-Source on Resistance

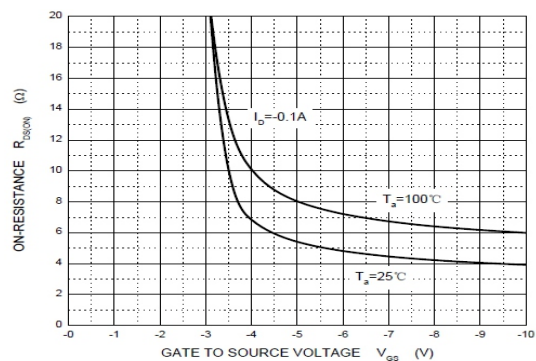


Figure4. Drain-Source on Resistance

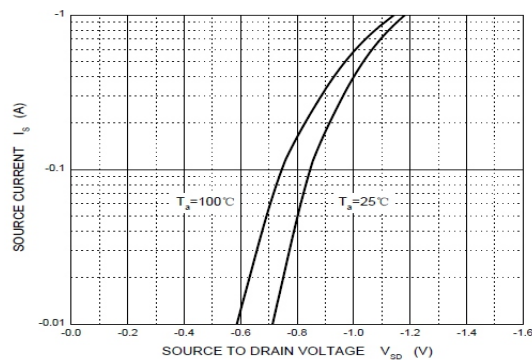


Figure5. Diode Forward Voltage vs. current

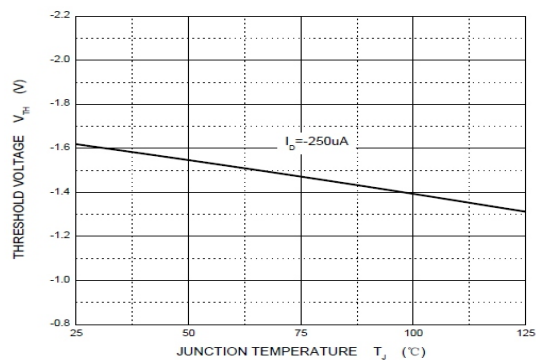
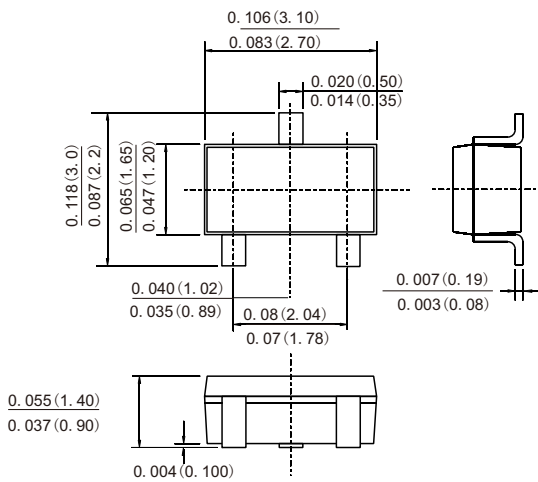


Figure6. Gate Threshold vs. Junction Temperature

RATINGS AND CHARACTERISTIC OF BSS84

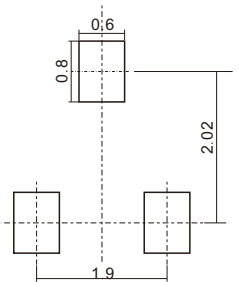
PACKAGE OUTLINE DIMENSIONS

SOT-23



Dimensions in inches and (millimeters)

Suggested Pad Layout



Dimensions in millimeters

Friendship Reminder

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