

P-Channel Enhancement MOSFET

Features

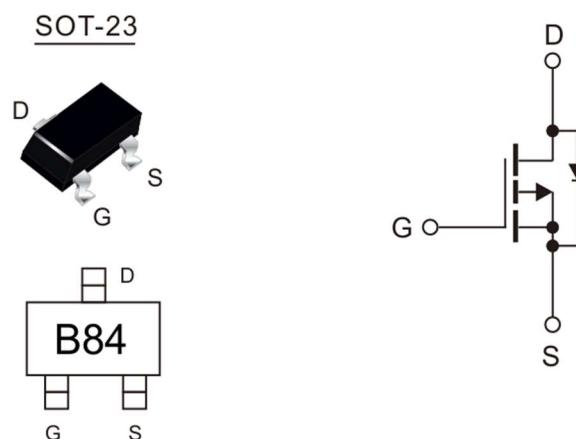
- Trench Power LV MOSFET technology
- High speed switching
- Halogen-Free & Lead-Free

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

Application

- Load switch
- Battery protection
- Power management

Marking information



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

Parameter	Symbol	Value	Unit	
Drain-Source Voltage	V_{DS}	-60	V	
Gate-Source Voltage	V_{GS}	± 20	V	
Continuous Drain Current	$T_A = 25^\circ\text{C}$	I_D	-0.17	A
	$T_A = 70^\circ\text{C}$	I_D	-0.14	A
Pulse Drain Current ¹⁾	I_{DM}	-0.68	A	
Power Dissipation $T_A = 25^\circ\text{C}$	P_D	0.225	W	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$	

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient ²⁾	$R_{\theta JA}$	556	$^\circ\text{C/W}$

Note:

1) Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$, limited by T_J max.

2) Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Characteristics at T_J = 25°C unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit
STATIC PARAMETERS					
Drain-Source Breakdown Voltage at V _{GS} =0V, I _D =-250μA	BV _{DSS}	-60			V
Drain-Source Leakage Current at V _{DS} =-60V, V _{GS} =0V	I _{DSS}			-1	μA
Gate Leakage Current at V _{GS} =±20V, V _{DS} =0V	I _{GSS}			±100	nA
Gate-Source Threshold Voltage at V _{DS} =V _{GS} , I _D =-250μA	V _{GS(th)}	-0.9	-1.4	-2.0	V
Drain-Source On-State Resistance at V _{GS} = -10V, I _D = -0.15A at V _{GS} = -4.5V, I _D = -0.15A	R _{DS(on)}		3.3 3.5	8 10	Ω
DYNAMIC PARAMETERS					
Input Capacitance at V _{GS} =0V, V _{DS} =-30V, f=1MHz	C _{iss}		30		pF
Output Capacitance at V _{GS} =0V, V _{DS} =-30V, f=1MHz	C _{oss}		10		
Reverse Transfer Capacitance at V _{GS} =0V, V _{DS} =-30V, f=1MHz	C _{rss}		5		
Turn-On Delay Time at V _{DD} =-30V, V _{GS} =-4.5V, R _{GEN} =2.5Ω, I _D =-0.15A	t _{d(on)}		2.5		nS
Turn-On Rise Time at V _{DD} =-30V, V _{GS} =-4.5V, R _{GEN} =2.5Ω, I _D =-0.15A	t _r		1		
Turn-Off Delay Time at V _{DD} =-30V, V _{GS} =-4.5V, R _{GEN} =2.5Ω, I _D =-0.15A	t _{d(off)}		16		
Turn-Off Fall Time at V _{DD} =-30V, V _{GS} =-4.5V, R _{GEN} =2.5Ω, I _D =-0.15A	t _f		8		
Body-Diode PARAMETERS					
Drain-Source Diode Forward Voltage at I _S =-0.17A, V _{GS} =0V	V _{SD}			-1.2	V
Maximum Body-Diode Continuous Current	I _S			-0.17	A

Electrical Characteristics Curves

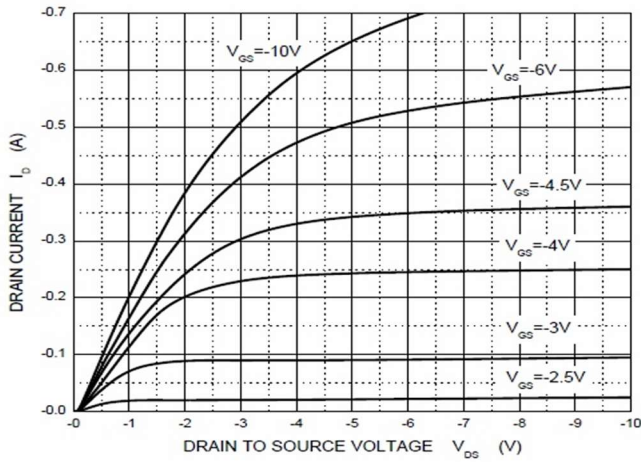


Figure1. Output Characteristics

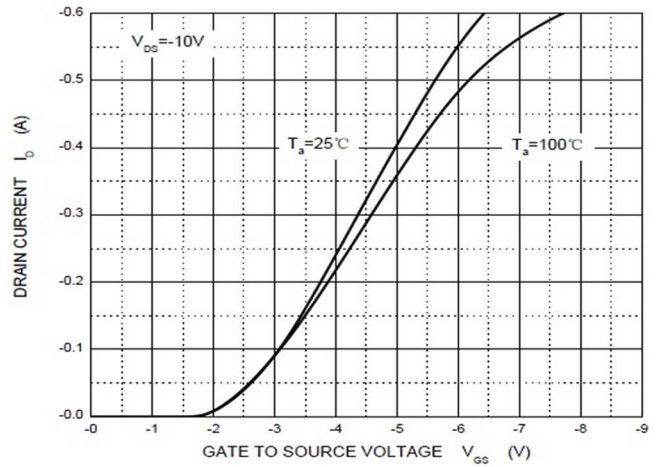


Figure2. Transfer Characteristics

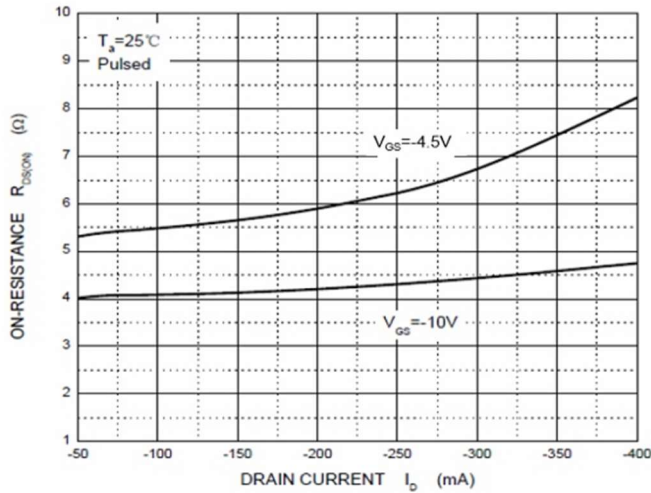


Figure3. Drain-Source on Resistance

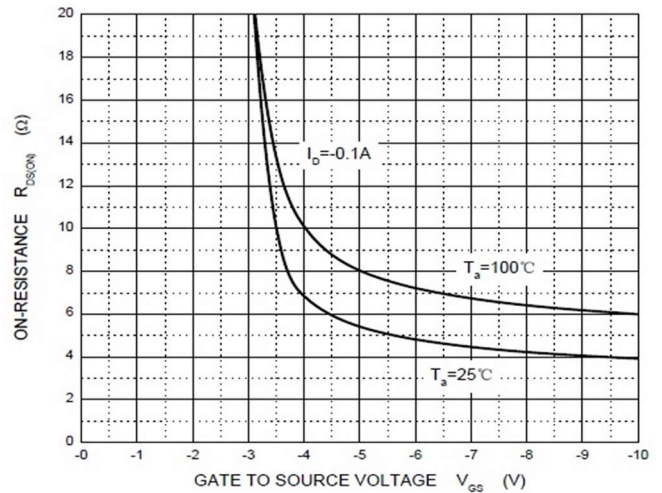


Figure4. Drain-Source on Resistance

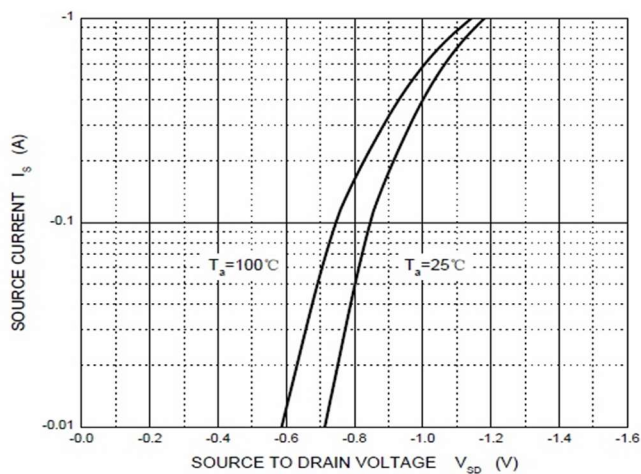


Figure5. Diode Forward Voltage vs. current

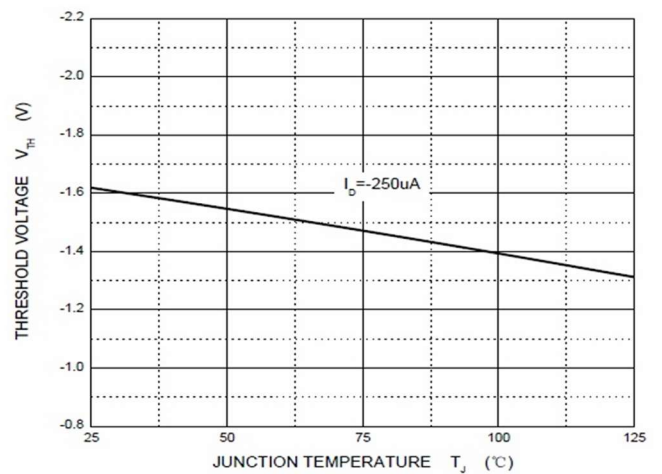
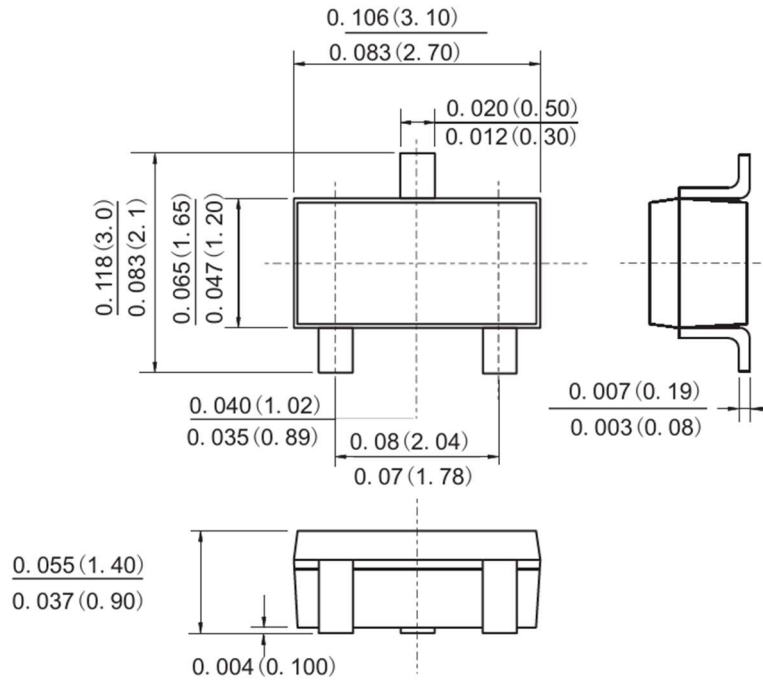


Figure6. Gate Threshold vs. Junction Temperature

Order Information

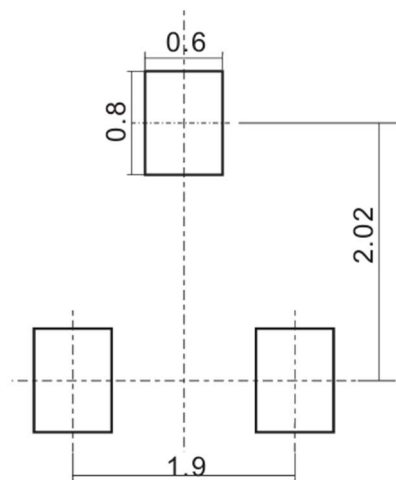
Part Number	Package	Quantity
ShBSS84	SOT-23	3000

Package Outline Dimensions (Units: mm) SOT-23



Dimensions in inches and (millimeters)

Suggested Pad Layout



Dimensions in millimeters