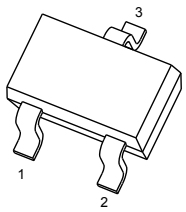
BSS84W

50V P-Channel MOSFET

Product Summary

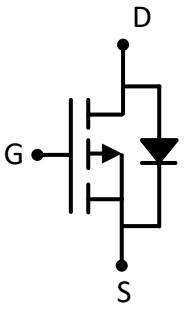
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-50V	1.7Ω@-10V	-0.13A
	1.9Ω@-5V	

SOT-323



1. GATE
2. SOURCE
3. DRAIN

Schematic diagram



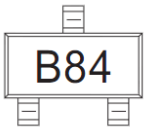
Feature

- Energy Efficient
- Low Threshold Voltage
- High-speed Switching
- Miniature Surface Mount Package Saves Board Space

Application

DC−DC converters,load switching, power management in portable and battery−powered products suchas computers, printers, cellular and cordless telephones

MARKING:



ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-50	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-0.13	A
Plused Drain Current(1)@tp<10μs	I_{DM}	-0.52	A
Power Dissipation	P_D	225	mW
Thermal Resistance from Junction to Ambient(2)	$R_{\theta JA}$	556	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

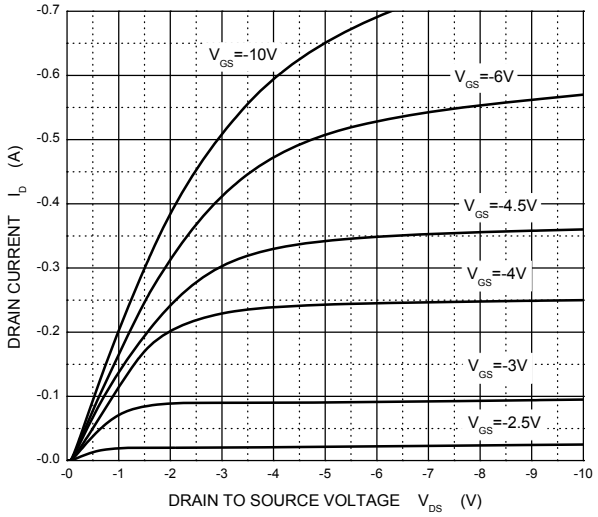
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-50			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-50V,V_{GS} = 0V			-15	μA
		V_{DS} =-25V,V_{GS} = 0V			-0.1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±5	μA
Gate threshold voltage(3)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.9	-1.4	-2	V
Drain-source on-resistance(3)	$R_{DS(on)}$	V_{GS} =-10V, I_D =-0.1A		1.7	5	Ω
		V_{GS} =-4.5V, I_D =-0.1A		1.9	6	
Forward tranconductance(1)	g_{FS}	V_{DS} =-25V, I_D =-0.1A	50			mS
Dynamic characteristics(4)						
Input Capacitance	C_{iss}	V_{DS} =-5V,V_{GS} =0V,f =1MHz		30		pF
Output Capacitance	C_{oss}			10		
Reverse Transfer Capacitance	C_{rss}			5		
Switching characteristics(4)						
Turn-on delay time	$t_{d(on)}$	V_{DD}=-15V, R_L=50Ω,I_D=-2.5A		2.5		ns
Turn-on rise time	t_r			1		
Turn-off delay time	$t_{d(off)}$			16		
Turn-off fall time	t_f			8		
Source-Drain Diode characteristics						
Diode forward current	I_S				-0.13	A
Diode pulsed forward current	I_{SM}				-0.52	
Diode Forward voltage	V_{DS}	V_{GS} =0V, I_S=-0.13A			-1.2	V

Notes :

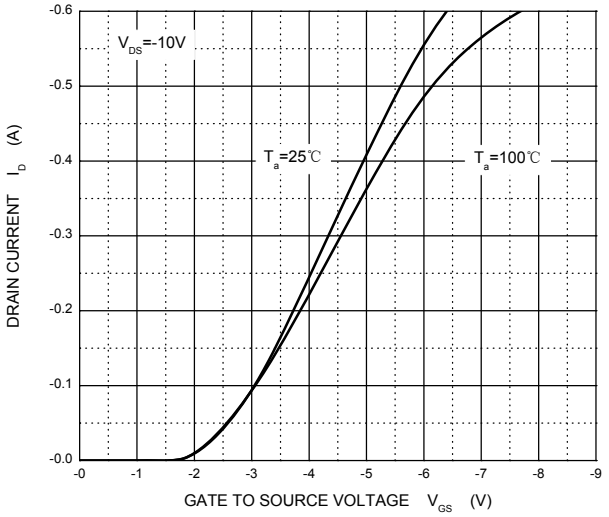
1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board , t≤10s.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤2%.
4. Guaranteed by design, not subject to producting.

Typical Electrical and Thermal Characteristics

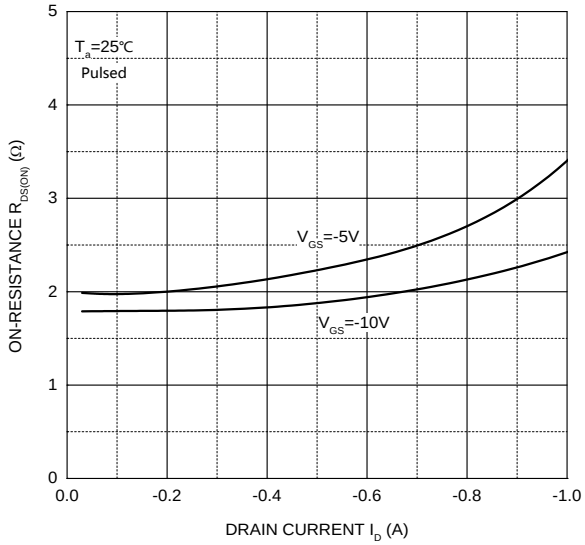
Output Characteristics



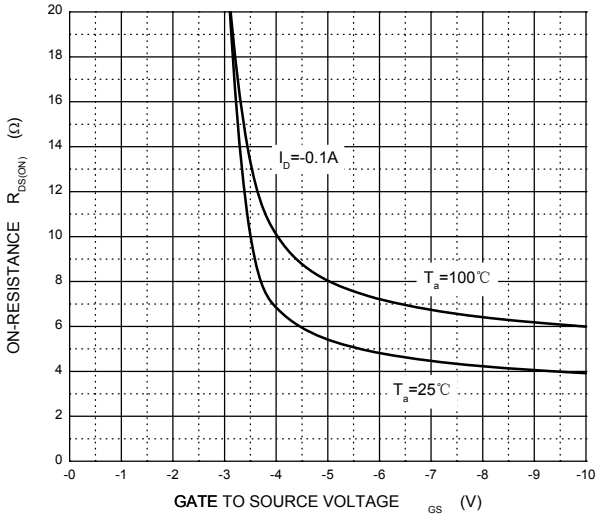
Transfer Characteristics



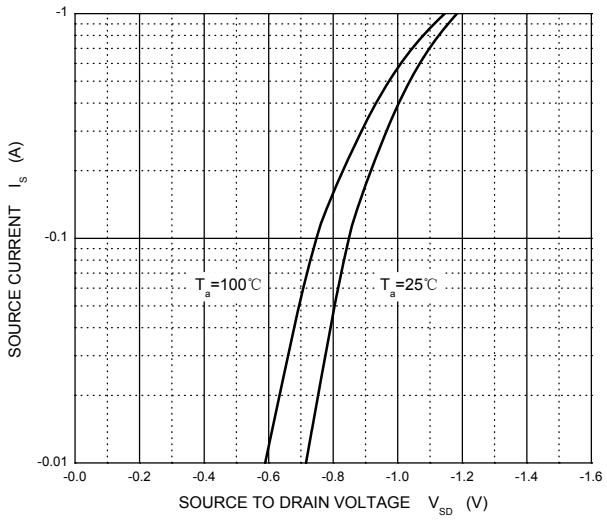
$R_{DS(ON)}$ – I_D



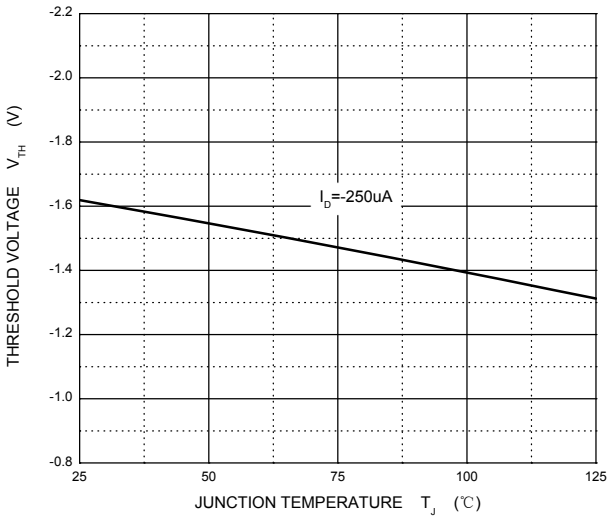
$R_{DS(ON)}$ —— V_{GS}



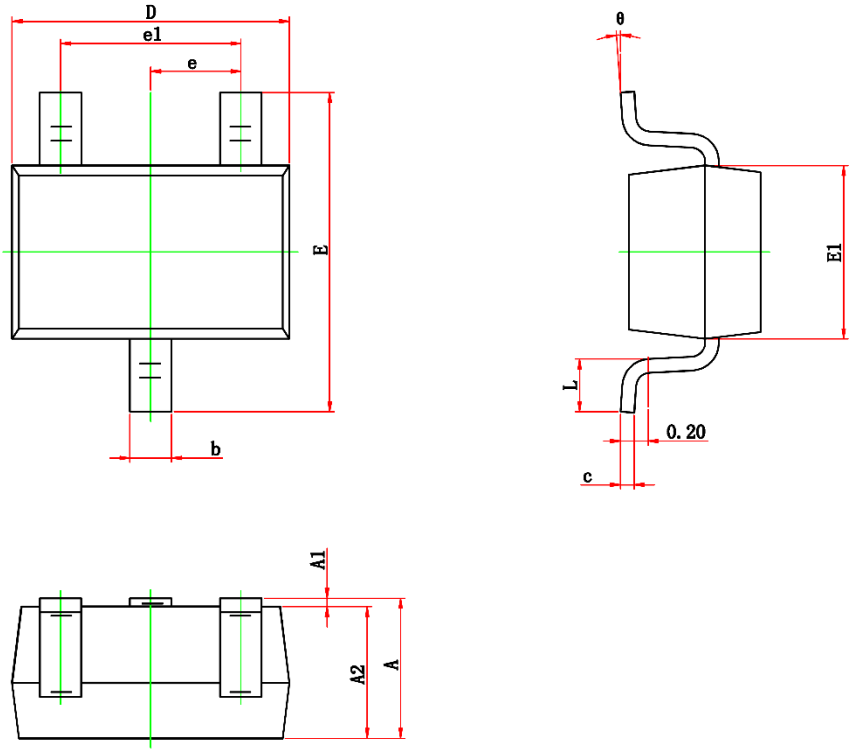
I_S —— V_{SD}



Threshold Voltage



SOT-323 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.050	0.150	0.002	0.006
D	1.900	2.200	0.075	0.087
E	2.000	2.450	0.079	0.096
E1	1.150	1.350	0.045	0.053
e	0.650TYP.		0.026TYP.	
e1	1.200	1.400	0.047	0.055
L	0.200	0.460	0.008	0.018
θ	0°	8°	0°	8°