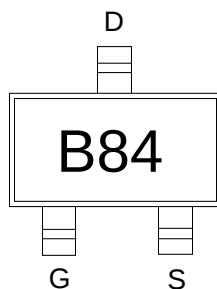


Features

- Advanced trench cell design
- High speed switch
- Low Gate Charge

Application

- Portable appliances
- Video monitor

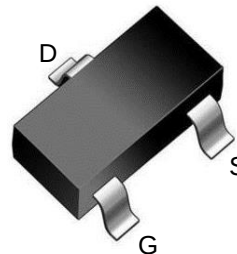


B84: Device code

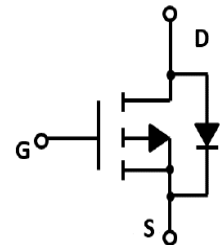
Marking and pin assignment

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-50V	5Ω@-10V	-0.13A
	6Ω@-5V	



SOT-23 top view



Schematic diagram



Pb-Free



RoHS



Halogen-Free

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)			
V_{DS}	Drain-Source Breakdown Voltage	-50	V
V_{GS}	Gate-Source Voltage	±20	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-50 to 150	°C
I_S	Diode Continuous Forward Current	$T_c=25^\circ\text{C}$ -0.13	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$ -0.68	A
I_D	Continuous Drain Current@GS=10V	$T_c=25^\circ\text{C}$ -0.13	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$ 0.225	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient	556	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
BSS84	SOT-23	B84	3,000	45,000	180,000	7" reel

Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	VGS=0V, ID=-250μA	-50	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	VDS=-50V, VGS=0V	--	--	-1	uA
I _{GSS}	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	VDS=VGS, ID=-250μA	-1.0	--	-2.0	V
R _{DS(on)}	Drain-Source On-State Resistance	VGS=-10V, ID=-0.1A	--	4.0	5.0	Ω
		VGS=-4.5V, ID=-0.1A	--	4.2	6.0	Ω
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
C _{ISS}	Input Capacitance	VDS=-30V, VGS=0V, f=1MHz	--	30	--	pF
C _{OSS}	Output Capacitance		--	10	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	5	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	VDD=-30V, ID=-0.15A, VGS=-4.5V	--	1.77	--	nC
Q _{gs}	Gate Source Charge		--	0.57	--	nC
Q _{gd}	Gate Drain Charge		--	0.18	--	nC
t _{d(on)}	Turn-on Delay Time	VDD=-30V, ID=-0.15A, VGS=-4.5V, RG=2.5Ω	--	2.5	--	nS
t _r	Turn-on Rise Time		--	1	--	nS
t _{d(off)}	Turn-Off Delay Time		--	16	--	nS
t _f	Turn-Off Fall Time		--	8	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25℃, Is=-0.1A,	--	--	-1.2	V

Typical Operating Characteristics

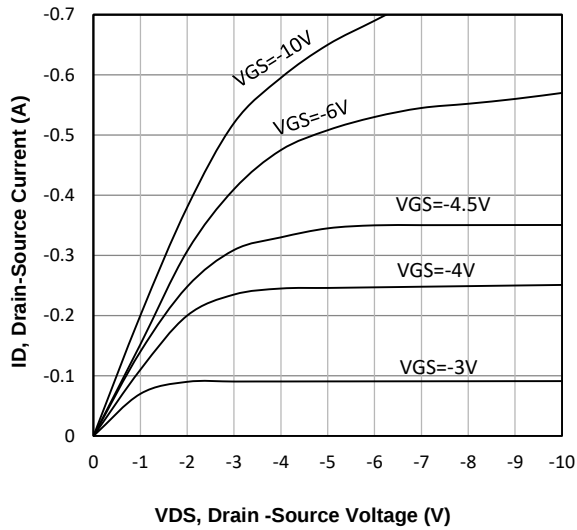


Fig1. Typical Output Characteristics

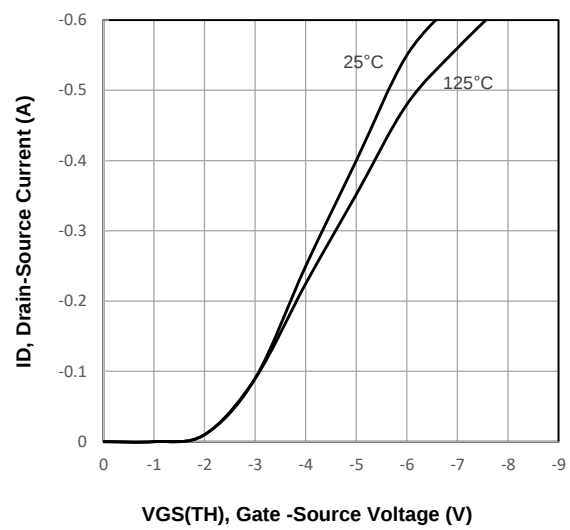


Fig2. Typical Transfer Characteristics

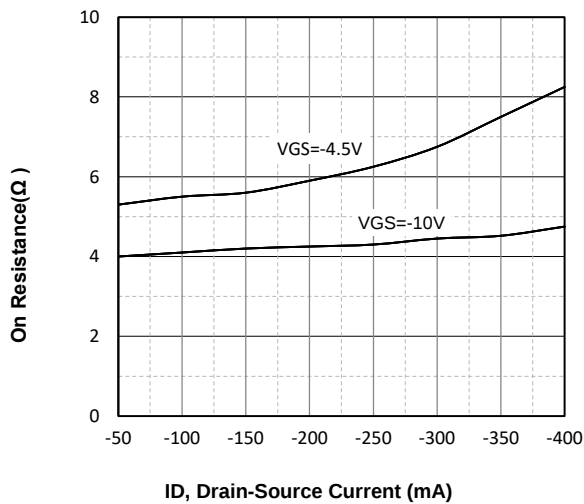


Fig3. Drain-Source on Resistance

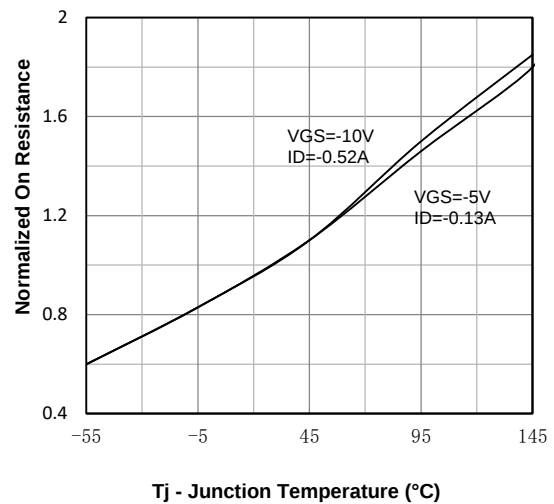


Fig4. Normalized On-Resistance Vs. Temperature

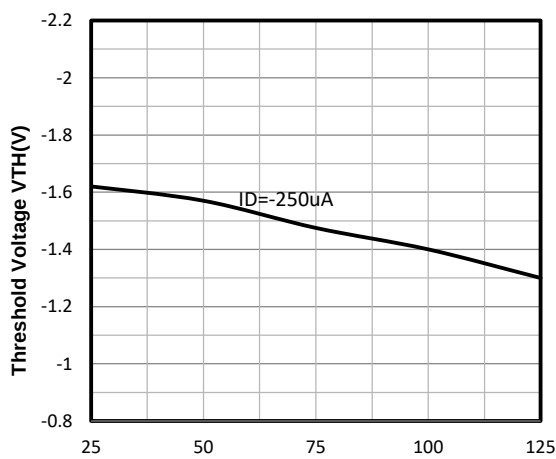


Fig5. Gate Threshold vs. Junction Temperature

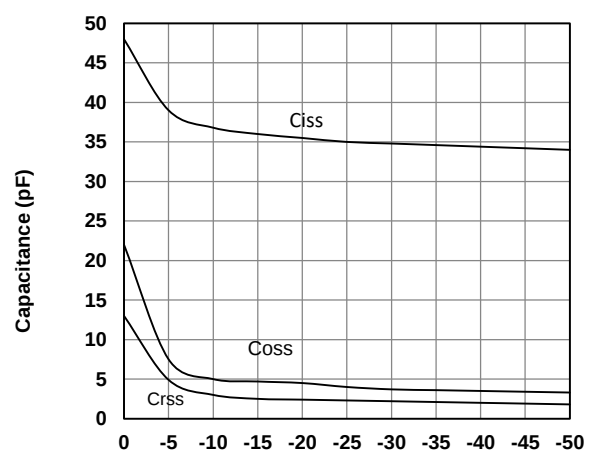
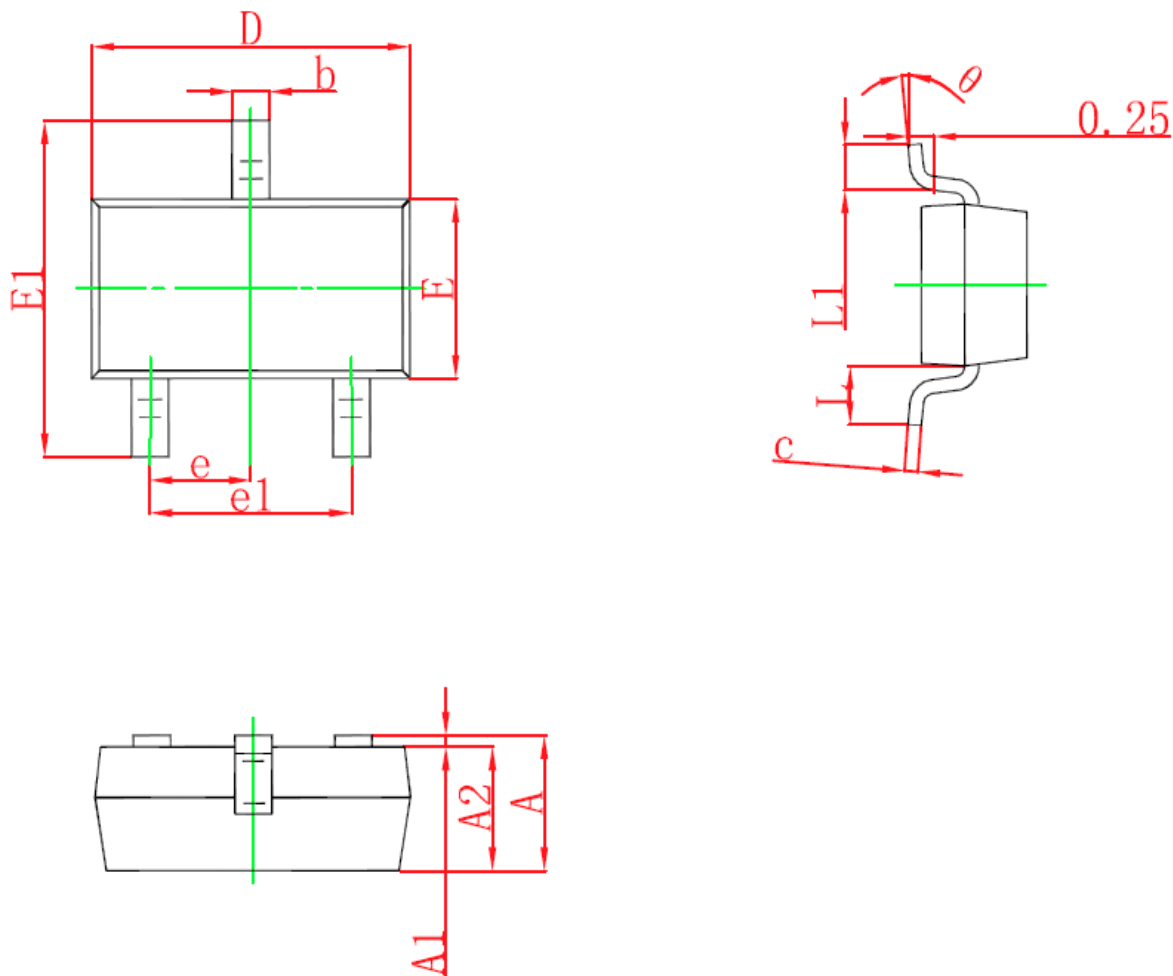


Fig6 Typical Capacitance Vs. Drain-Source Voltage

SOT-23 Package information



Symbol	Dimensions in Millimeters(mm)		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
E1	2.250	2.550	0.088	0.100
E	1.200	1.400	0.047	0.055
e	0.950TYP		0.037TYP	
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°