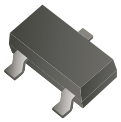
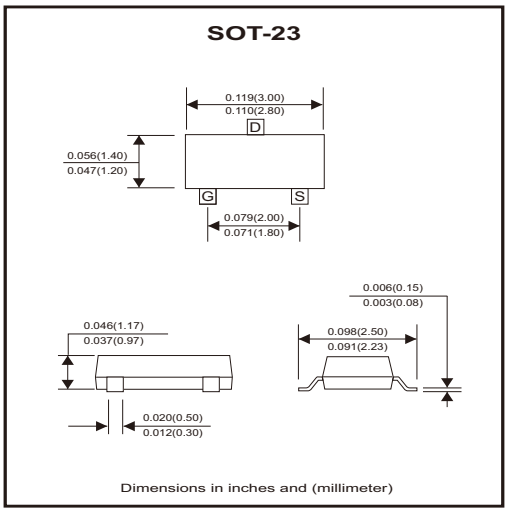
MOSFET

BSS84-HF

P-Channel
RoHS Device
Halogen Free





Features

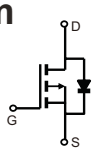
- $V_{DS(V)}$ = -50V
- I_D = -130mA
- $R_{DS(ON)}$ < 10Ω (V_{GS}= -5V)

Mechanical data

- Case: SOT-23, molded plastic.
- Mounting position: Any.

Circuit Diagram

- G: Gate
- S: Source
- D: Drain



Maximum Ratings (at T_A=25°C 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
Pulsed drain current @ tp < 10s	I_{DM}	-0.52	A
Power dissipation	P_D	225	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	556	°C/W
Operating junction temperature range	T_J	-55 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

Electrical Characteristics (at T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	BV_{DSS}	I_D = -250μA, V_{GS} = 0V	-50			V
Zero gate voltage drain current	I_{DSS}	V_{DS} = -25V, V_{GS} = 0V			-0.1	μA
		V_{DS} = -50V, V_{GS} = 0V			-15	
Gate-body leakage current	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V			±10	μA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -1mA	-0.8		-2	V
Static drain-source on-resistance	$R_{DS(on)}$	V_{GS} = -5V, I_D = -100mA			10	Ω
Forward transconductance	g_{FS}	V_{DS} = -25V, I_D = -100mA, f = 1KHz	50			mS
Input capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = -5V, f = 1MHz		30		pF
Output capacitance	C_{oss}			10		
Reverse transfer capacitance	C_{rss}			5		
Turn-on delay time	$t_{d(on)}$	V_{DD} = -15V, I_D = -0.25A, R_L = 50Ω (Note 1)		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		
Gate charge	Q_T			6000		PC
Maximum body-diode continuous current	I_S				-0.13	A
Maximum body-diode pulsed current	I_{SM}				-0.52	
Diode forward voltage	V_{SD}	I_{SD} = -130mA, V_{GS} = 0V		-2.5		V

Notes: 1. Switching time is essentially independent of operating temperature.

Typical Rating and Characteristic Curves (BSS84-HF)

Fig.1 - Transfer Characteristics

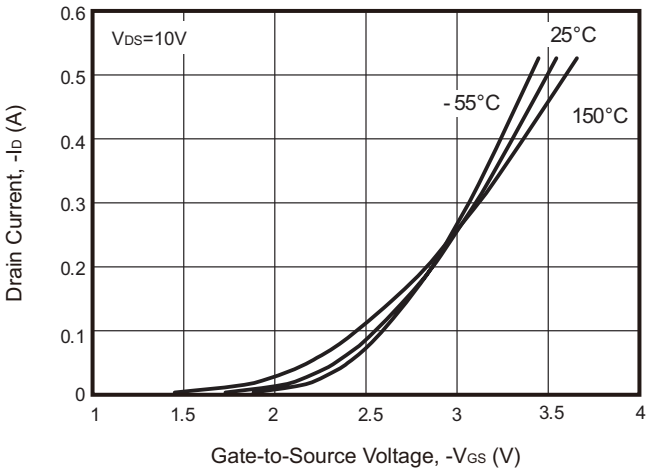


Fig.2 - On-Region Characteristics

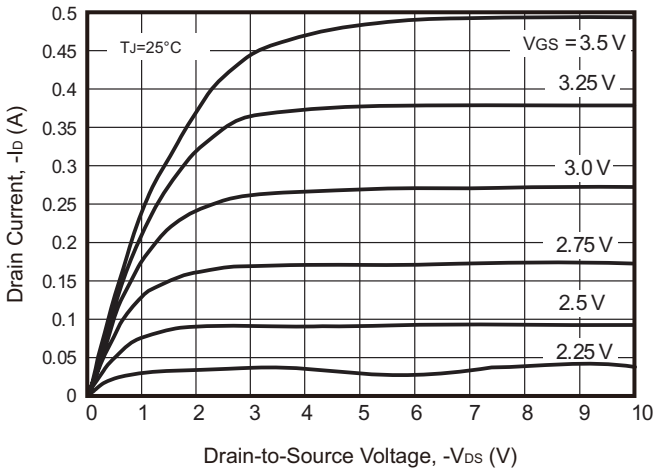


Fig.3 - On-Resistance versus Drain Current

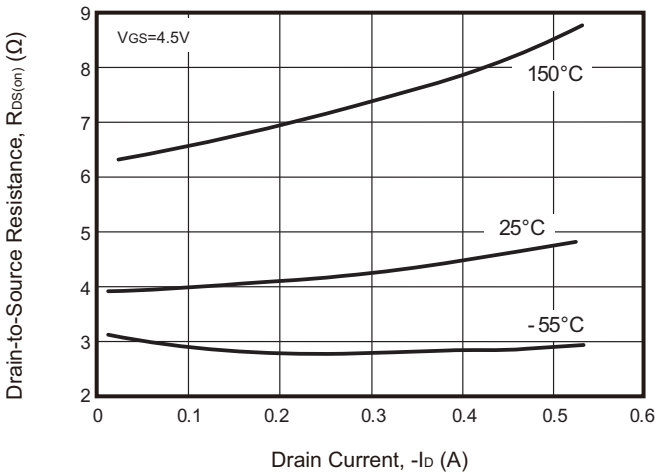
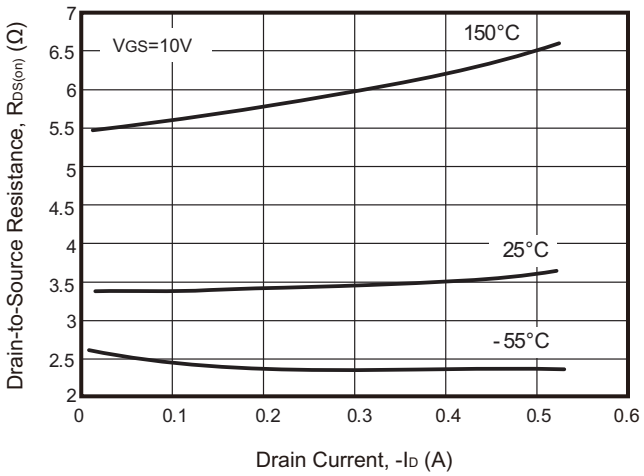


Fig.4 - On-Resistance versus Drain Current



Typical Rating and Characteristic Curves (BSS84-HF)

Fig.5 - On-Resistance Variation with Temperature

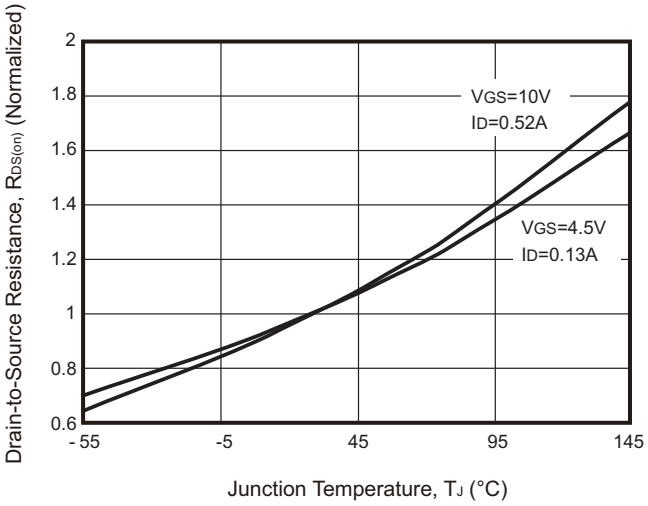


Fig.6 - Gate Charge

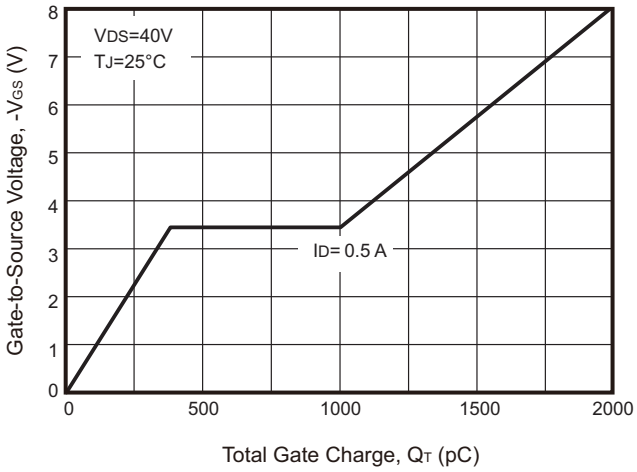
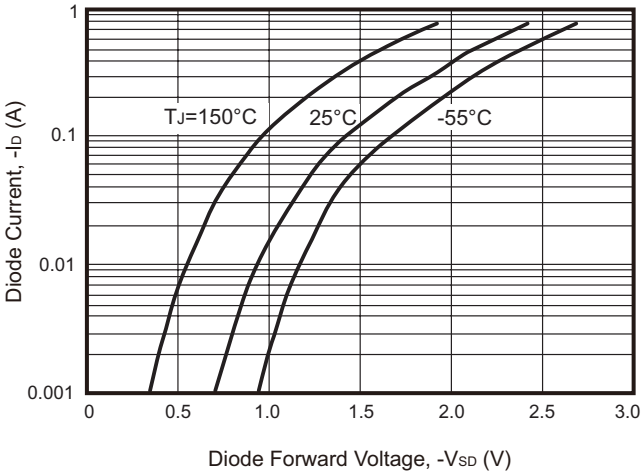
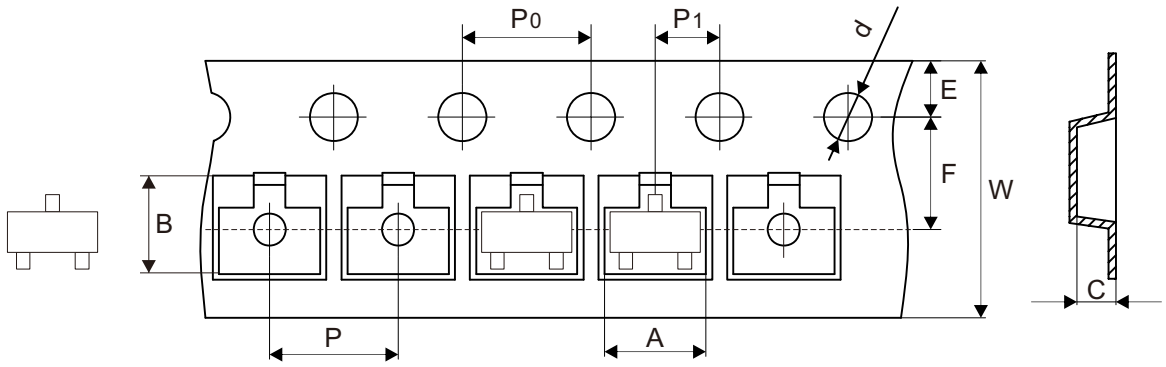
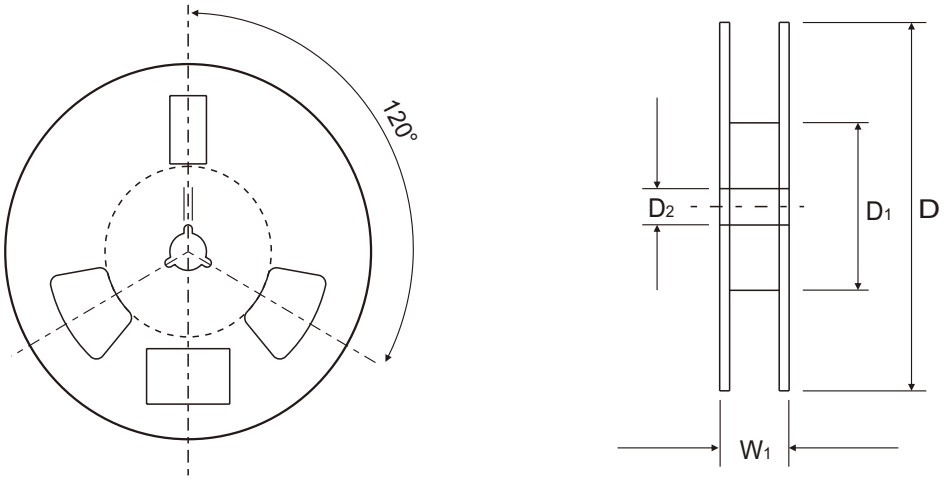


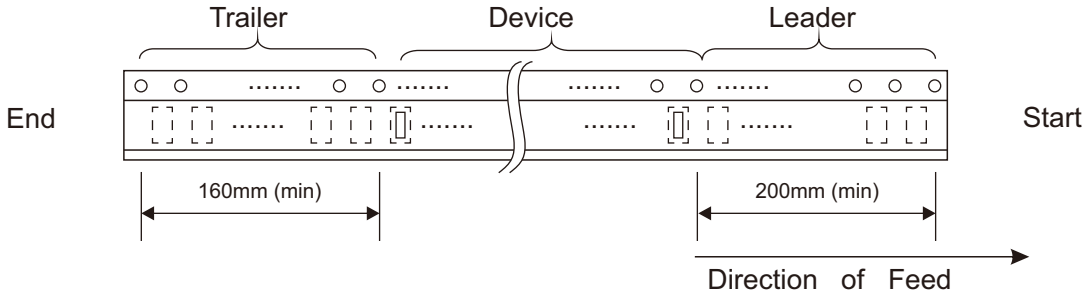
Fig.7 - Body Diode Forward Voltage



Reel Taping Specification





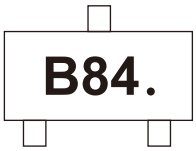


	SYMBOL	A	B	C	d	D	D_1	D_2
SOT-23	(mm)	3.10 ± 0.10	2.85 ± 0.10	1.40 ± 0.10	1.55 ± 0.10	178 ± 1	50.0 MIN.	13.0 ± 0.20
	(inch)	0.122 ± 0.004	0.112 ± 0.004	0.055 ± 0.004	0.061 ± 0.004	7.008 ± 0.04	1.969 MIN.	0.512 ± 0.008

	SYMBOL	E	F	P	P_0	P_1	W	W_1
SOT-23	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	8.00 ± 0.30	14.4 MAX.
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.315 ± 0.012	0.567 MAX.

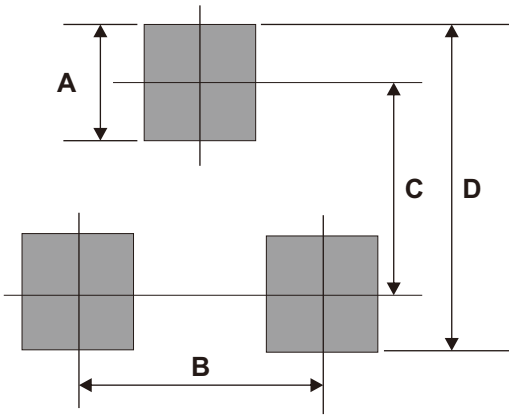
Marking Code

Part Number	Marking Code
BSS84-HF	B84.



Suggested P.C.B. PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.80	0.031
B	1.90	0.075
C	2.02	0.080
D	2.82	0.111



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-23	3,000	7