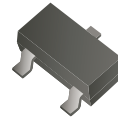


P-Channel MOSFET

BSS84-HF

P-Channel
RoHS Device
Halogen Free



Features

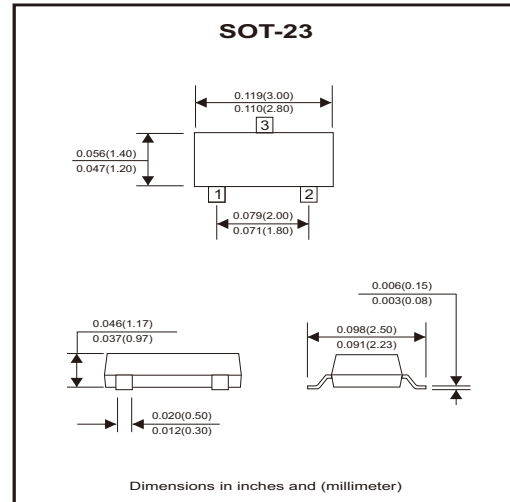
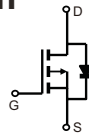
- $V_{DS}(V) = -50V$
- $I_D = -130mA$
- $R_{DS(ON)} < 10\Omega$ ($V_{GS} = -5V$)

Mechanical data

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

Circuit Diagram

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



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

Electrical Characteristics (at $T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	V_{DSS}	$I_D = -250\mu A$, $V_{GS} = 0V$	-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}	$V_{DS} = 0V$, $V_{GS} = \pm 20V$			± 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	$t_{d(on)}$	$V_{DD} = -15V$, $I_D = -0.25A$, $R_L = 50\Omega$ (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	$I_{SD} = -130mA$, $V_{GS} = 0V$			-0.13	A
Maximum body-diode pulsed current	I_{SM}				-0.52	
Diode forward voltage	V_{SD}			-2.5		V

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

Company reserves the right to improve product design, functions and reliability without notice.

REV:B

Typical characteristics (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Fig.1 - Transfer Characteristics

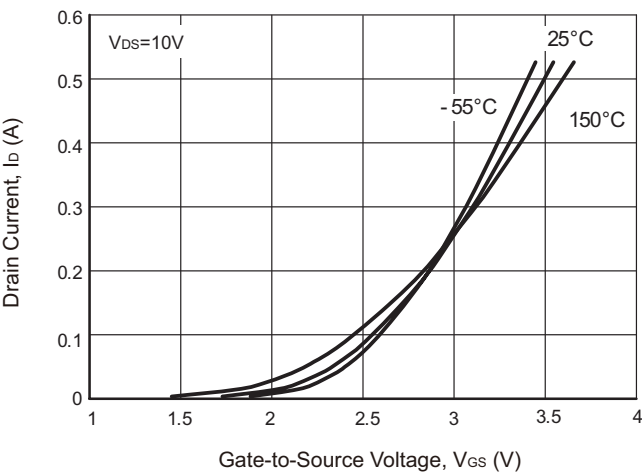


Fig.2 - On-Region Characteristics

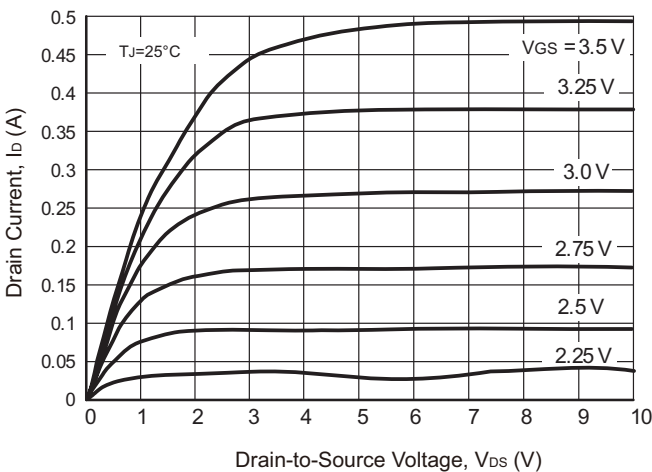


Fig.3 - On-Resistance versus Drain Current

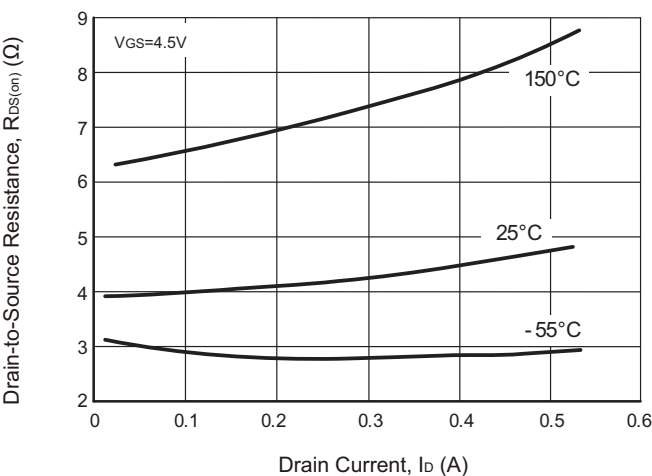


Fig.4 - On-Resistance versus Drain Current

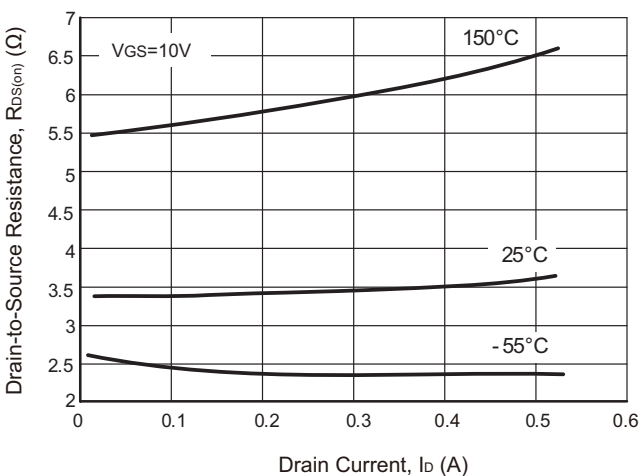


Fig.5 - On-Resistance Variation with Temperature

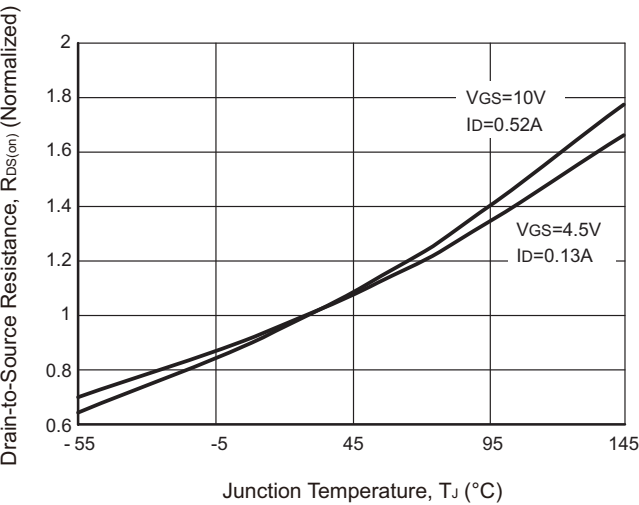


Fig.6 - Gate Charge

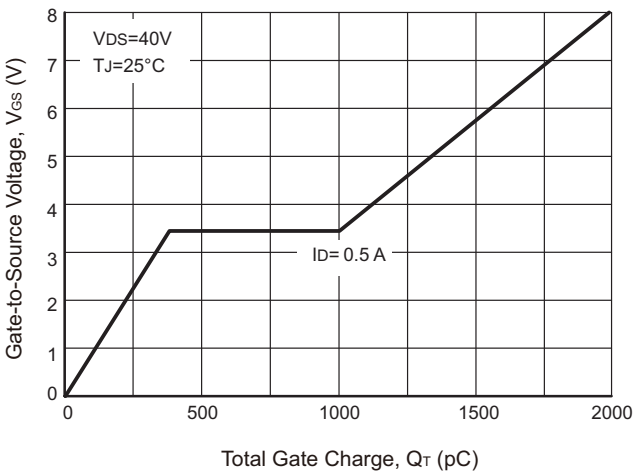
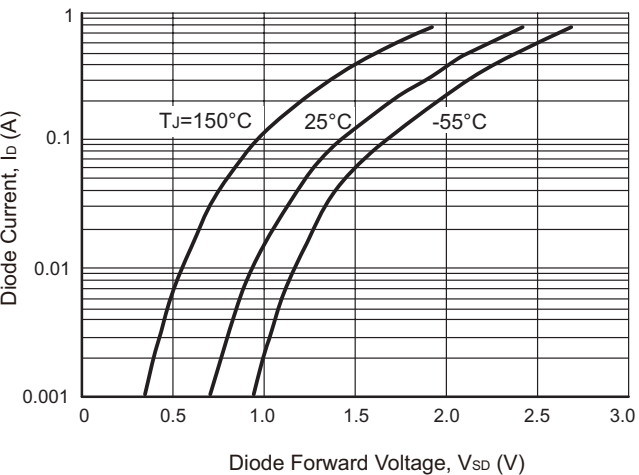
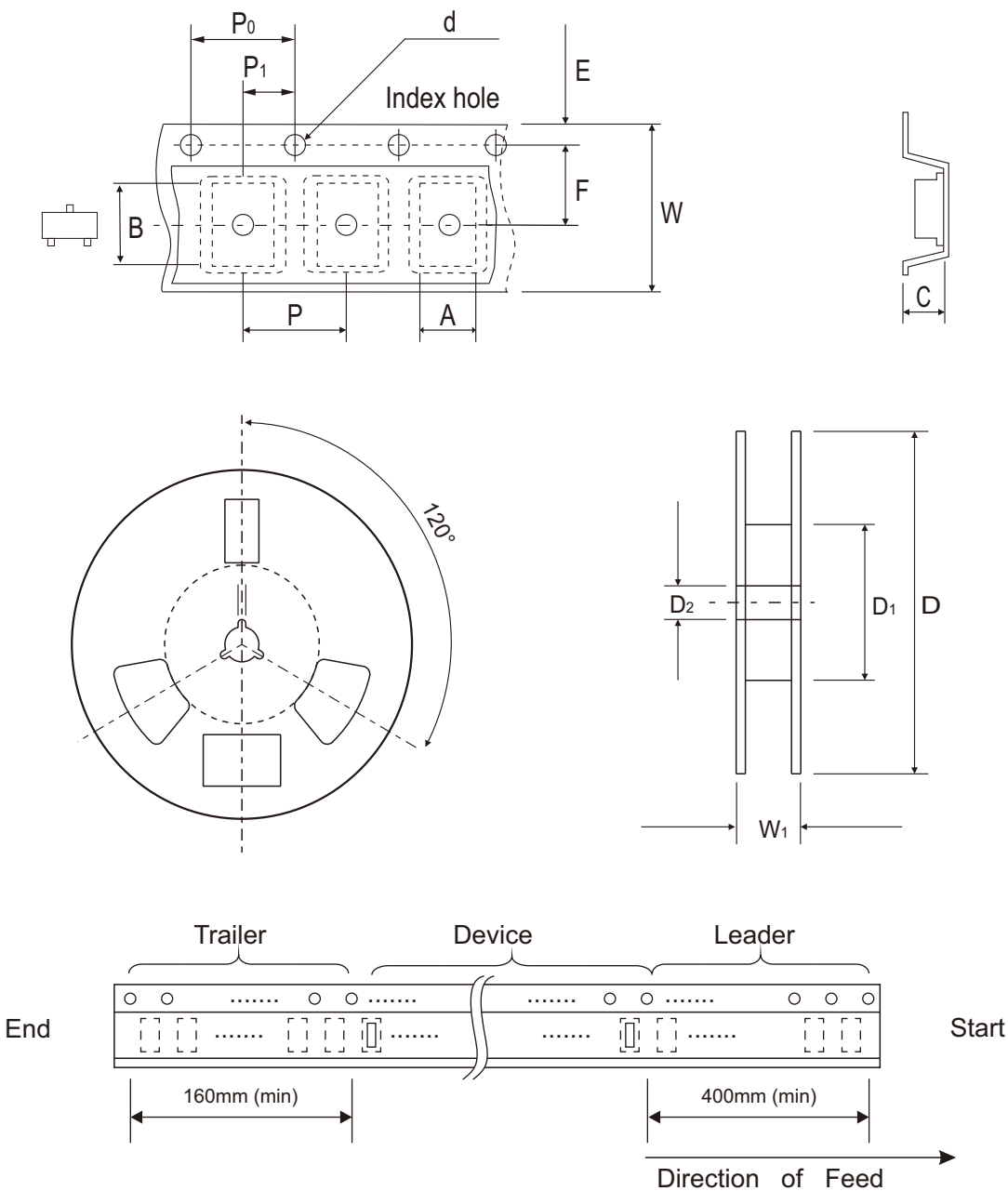


Fig.7 - Body Diode Forward Voltage



Reel Taping Specification



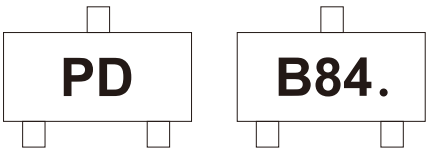
SOT-23	SYMBOL	A	B	C	d	D	D ₁	D ₂
	(mm)	3.10 ± 0.10	2.85 ± 0.10	1.40 ± 0.10	1.55 ± 0.10	178 ± 1	50.0 MIN.	13.0 ± 0.20
	(inch)	0.122 ± 0.004	0.112 ± 0.004	0.055 ± 0.004	0.061 ± 0.004	7.008 ± 0.04	1.969 MIN.	0.512 ± 0.008

SOT-23	SYMBOL	E	F	P	P ₀	P ₁	W	W ₁
	(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.

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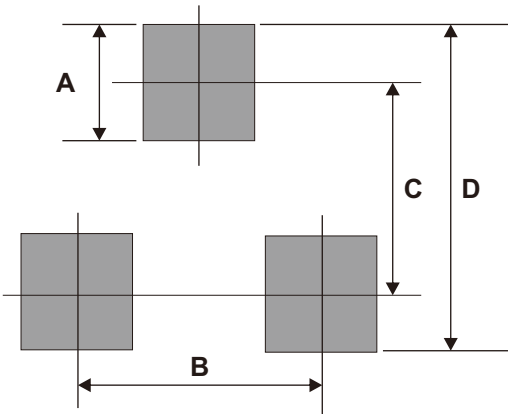
Marking Code

Part Number	Marking Code	
BSS84-HF	PD	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