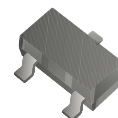


# P-Channel MOSFET

## BSS84-HF

P-Channel  
RoHS Device  
Halogen Free

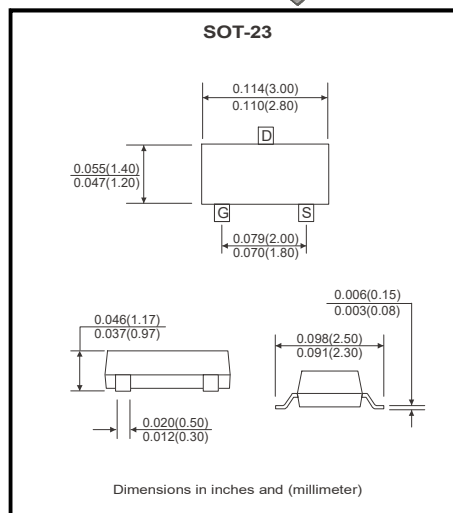
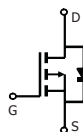


### Features

- V<sub>DS</sub> (V) = -50V
- I<sub>D</sub> = -130 mA
- R<sub>DS(ON)</sub> < 10Ω (V<sub>GS</sub>= -5V)

### Circuit diagram

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



### Maximum Ratings (at T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DS</sub>	-50	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Continuous Drain Current	I <sub>D</sub>	-0.13	A
Pulsed Drain Current @t <sub>p</sub> <10 s	I <sub>DM</sub>	-0.52	A
Power Dissipation	P <sub>D</sub>	225	mW
Thermal Resistance from Junction to Ambient	R <sub>JA</sub>	556	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55~+150	°C

### Electrical Characteristics (at T<sub>A</sub>=25°C unless otherwise noted)

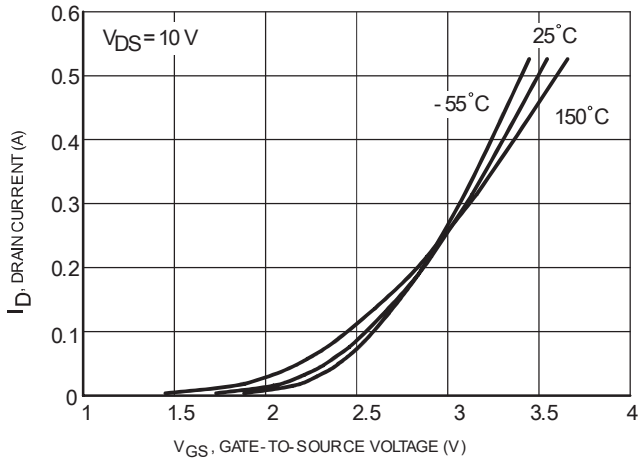
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =-250μA, V <sub>GS</sub> =0V	-50			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-25V, V <sub>GS</sub> =0V			-0.1	A
		V <sub>DS</sub> =-50V, V <sub>GS</sub> =0V			-15	
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±10	A
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-1.0mA	-0.8		-2	V
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =-5V, I <sub>D</sub> =-100mA			10	Ω
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-25V, I <sub>D</sub> =-100mA, f=1.0KHz	50			mS
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-5V, f=1MHz		30		pF
Output Capacitance	C <sub>oss</sub>			10		
Reverse Transfer Capacitance	C <sub>rss</sub>			5		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>DD</sub> =-15V, I <sub>D</sub> =-0.25A, R <sub>L</sub> =50 <sup>1)</sup>		2.5		ns
Turn-On Rise Time	t <sub>r</sub>			1		
Turn-Off DelayTime	t <sub>d(off)</sub>			16		
Turn-Off Fall Time	t <sub>f</sub>			8		
Gate Charge	Q <sub>T</sub>			6000		PC
Maximum Body-Diode Continuous Current	I <sub>S</sub>				-0.13	A
Maximum Body-Diode Pulsed Current	I <sub>SM</sub>				-0.52	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>SD</sub> =-130mA, V <sub>GS</sub> =0V		-2.5		V

Notes :1) Switching Time is Essentially Independent of Operating Temperature.

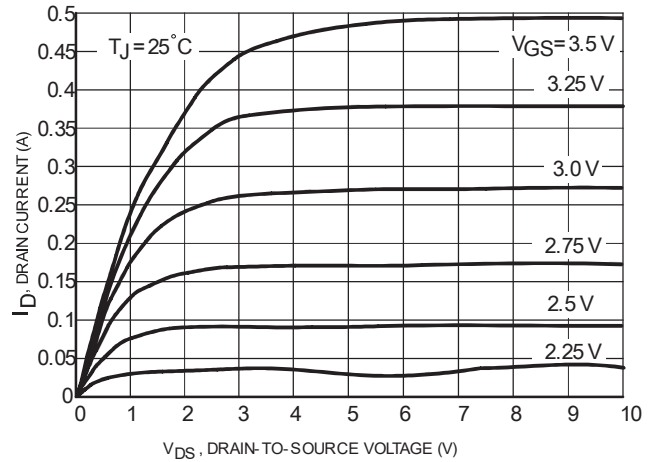
Company reserves the right to improve product design , functions and reliability without notice.

REV:A

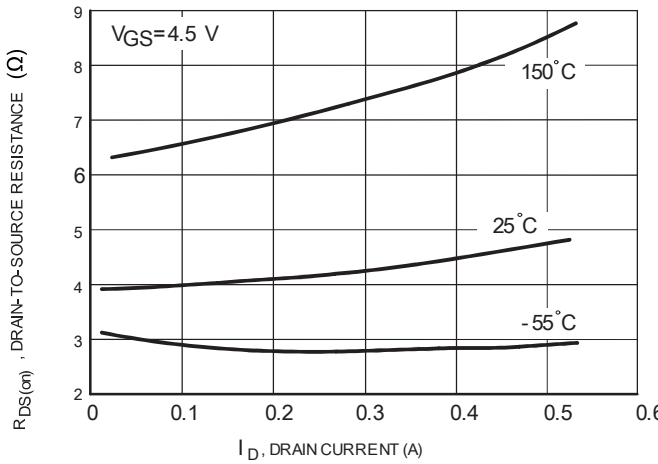
## Typical characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)



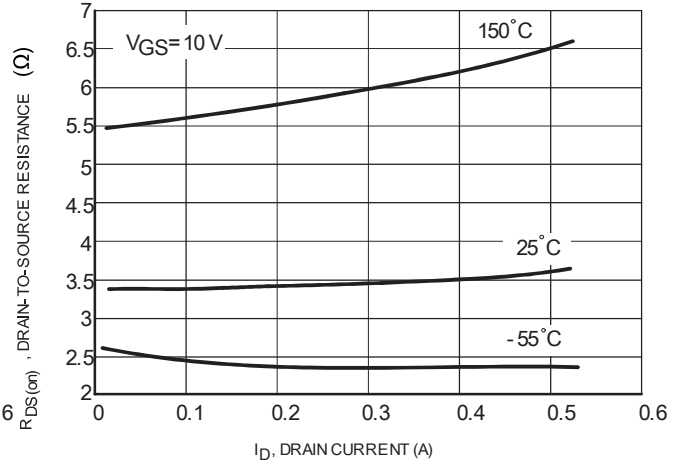
**Fig1. Transfer Characteristics**



**Fig2. On-Region Characteristics**



**Fig3. On-Resistance versus Drain Current**



**Fig4. On-Resistance versus Drain Current**

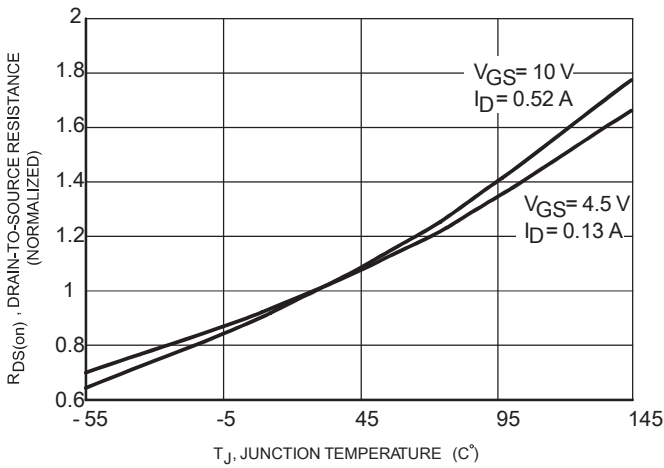


Fig5. On-Resistance Variation with Temperature

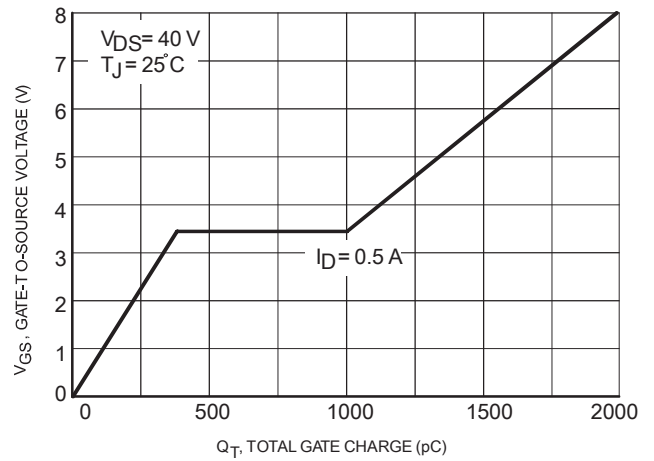
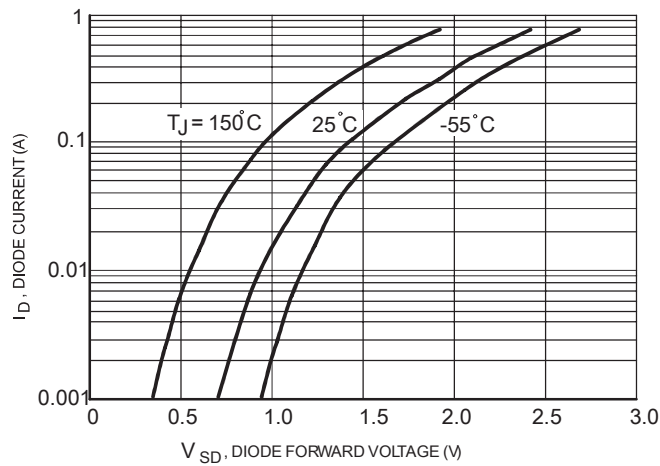
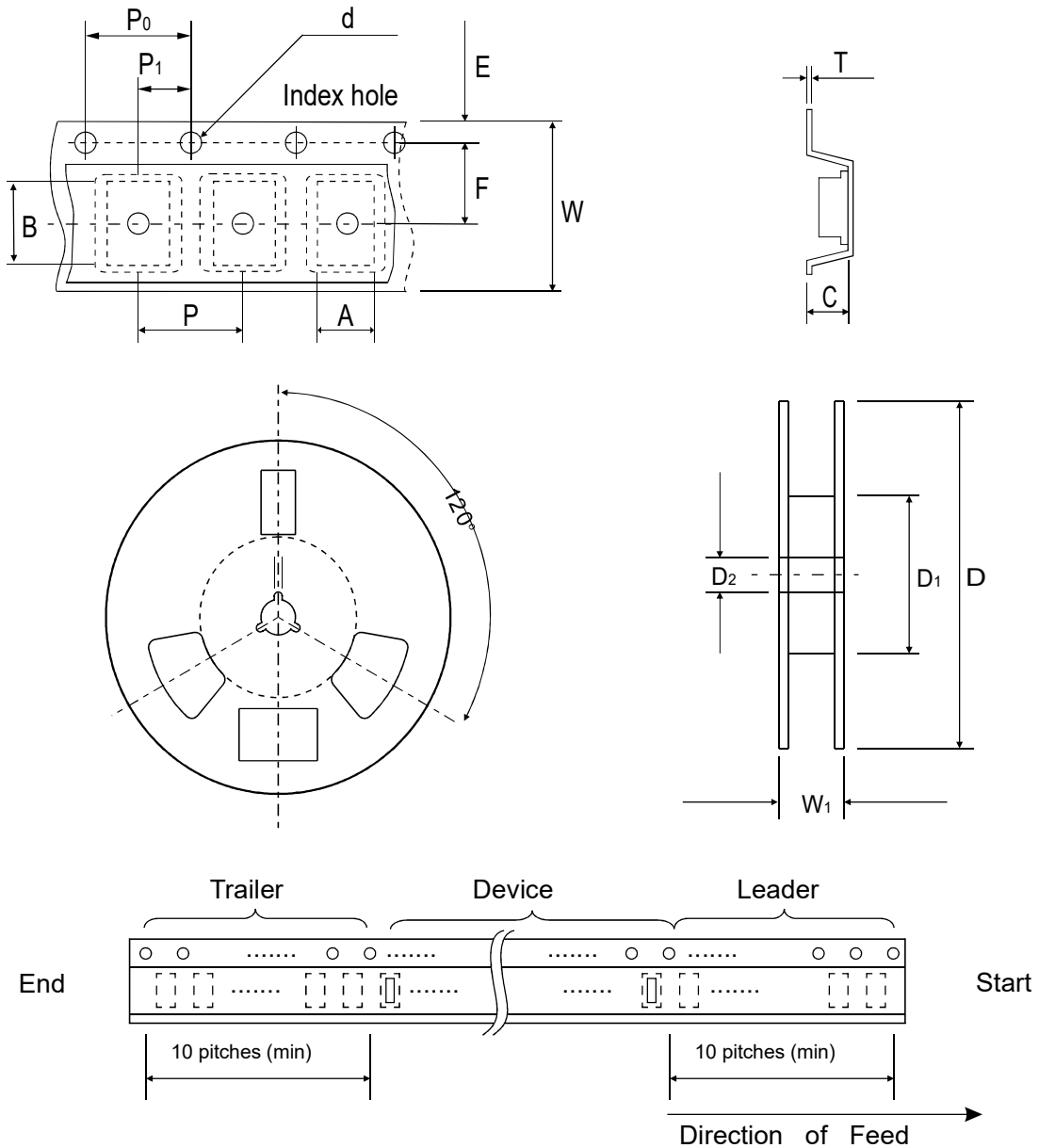


Fig6. Gate Charge



## Reel Taping Specification



SOT-23	SYMBOL	A	B	C	d	D	D <sub>1</sub>	D <sub>2</sub>
	(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

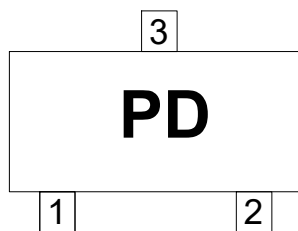
SOT-23	SYMBOL	E	F	P	P <sub>0</sub>	P <sub>1</sub>	W	W <sub>1</sub>
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	8.00 ± 0.30	14.4 MAX.
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.315 ± 0.012	0.567 MAX.

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REV:A

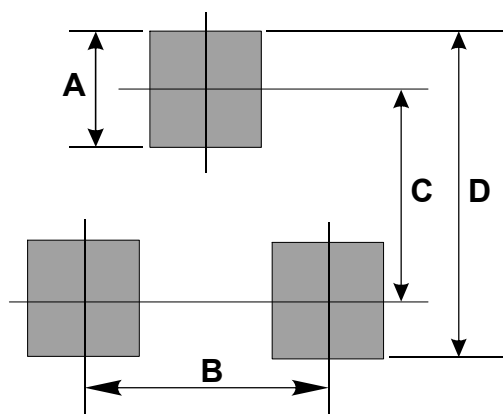
## Marking Code

Part Number	Marking Code
BSS84-HF	PD



## Suggested 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	Qty per Reel	Reel Size
	(Pcs)	(inch)
SOT-23	3000	7