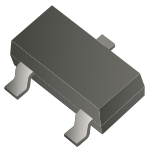


BSS84K-P2-HF

P-Channel
RoHS Device
Halogen Free



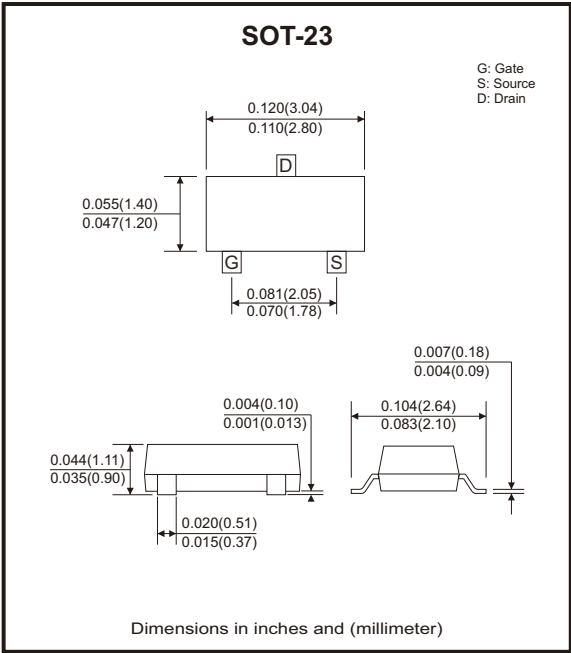
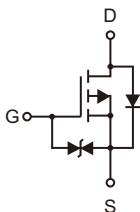
Features

- High density cell design for low $R_{DS(ON)}$.
- Voltage controlled small signal switch.
- Rugged and reliable.
- ESD protected.

Mechanical data

- Case: SOT-23, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.
- Mounting position: Any.

Circuit Diagram



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

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	-60	V
Gate-source voltage	V_{GS}	± 20	V
Continuous drain current	I_D	-0.13	A
Pulsed drain current (Note 1)	I_{DM}	-0.52	A
Power dissipation	P_D	225	mW
Thermal resistance junction to ambient	$R_{\theta JA}$	556	$^{\circ}\text{C/W}$
Operating junction temperature range	T_J	-55 to +150	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	BV _{DSS}	V _{GS} = 0V, I _D = -250μA	-60			V
Gate threshold voltage (Note 2)	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.8	-1.5	-2.5	V
Gate-body leakage current	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±10	μA
Zero gate voltage drain current	I _{DSS}	V _{DS} = -48V, V _{GS} = 0V			-1	μA
Drain-source on-resistance (Note 2)	R _{DS(on)}	V _{GS} = -10V, I _D = -0.5A		2.2	6	Ω
	R _{DS(on)}	V _{GS} = -4.5V, I _D = -0.2A		2.5	7	Ω
Diode forward voltage	V _{SD}	V _{GS} = 0V, I _S = -0.5A			-1.3	V
Dynamic Characteristics						
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						
Turn-on delay time	t _{d(on)}	V _{DD} = -15V, I _D = -2.5A, R _L = 50Ω		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		

Notes: 1. Pulse width limited by junction temperature.
 2. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Typical Rating and Characteristic Curves (BSS84K-P2-HF)

Fig.1 - Output Characteristics

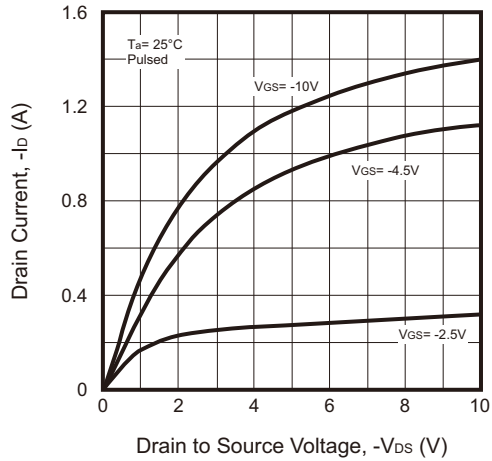


Fig.2 - Transfer Characteristics

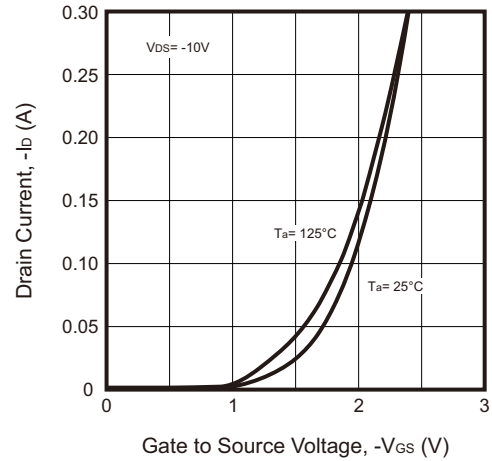


Fig.3 - On-Resistance vs. Drain Current

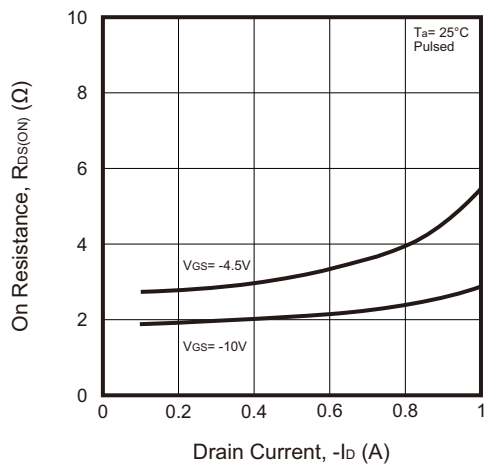


Fig.4 - On-Resistance vs. Gate to Source Voltage

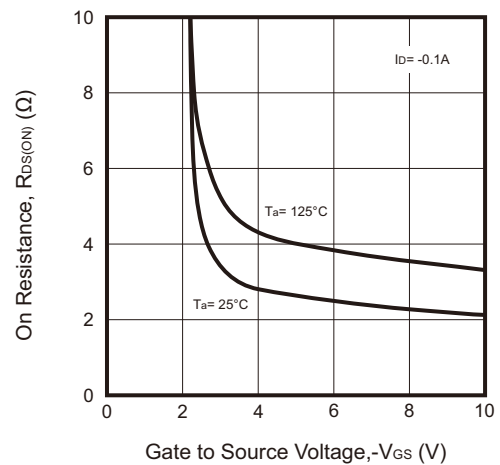


Fig.6 - I_S — V_{SD}

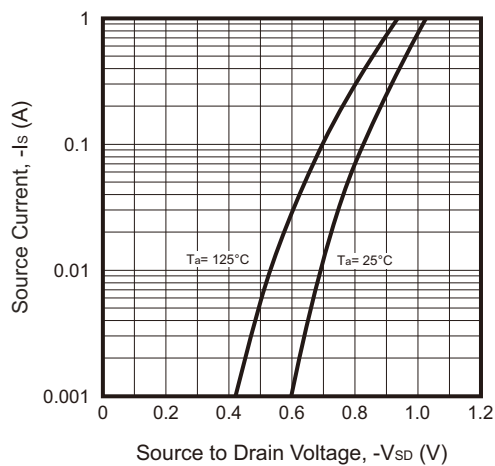
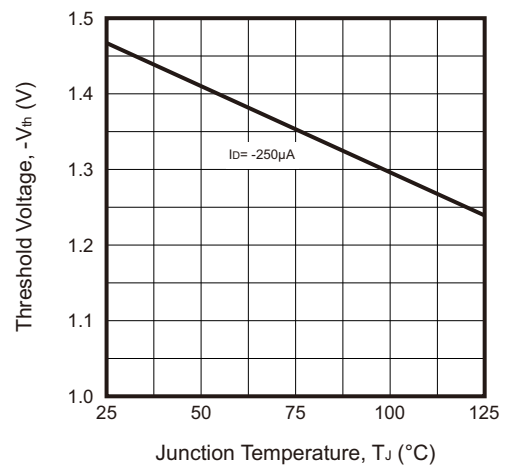
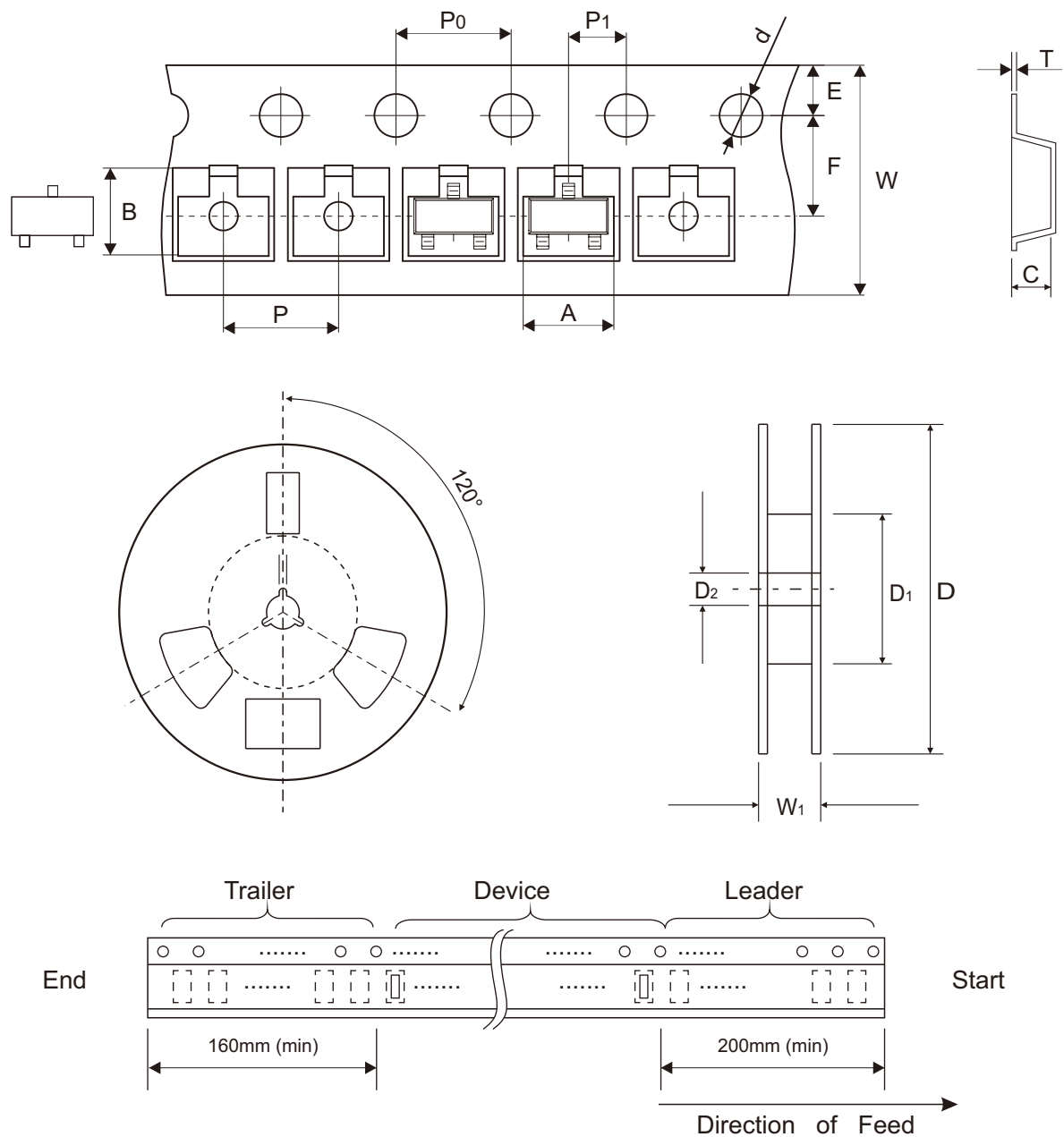


Fig.7 - Threshold Voltage



Reel Taping Specification

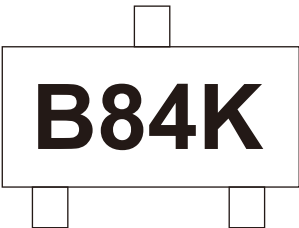


SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 + 0.08 - 0.10	1.50 + 0.10 - 0.00	178.00 ± 2.00	50.00 ± 0.50	13.00 ± 0.25
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 + 0.003 - 0.004	0.059 + 0.004 - 0.000	7.008 ± 0.079	1.969 ± 0.020	0.512 ± 0.010

SOT-23	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.02	8.00 + 0.30 - 0.10	9.50 ± 0.50
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.001	0.315 + 0.012 - 0.004	0.374 ± 0.020

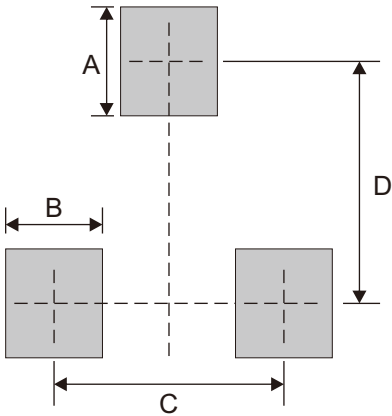
Marking Code

Part Number	Marking Code
BSS84K-P2-HF	B84K



Suggested P.C.B. PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.90	0.035
B	0.80	0.031
C	1.90	0.075
D	2.00	0.079



Standard Packaging

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