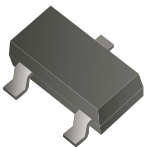


BSS84KW-P2-HF

P-Channel
RoHS Device
Halogen Free



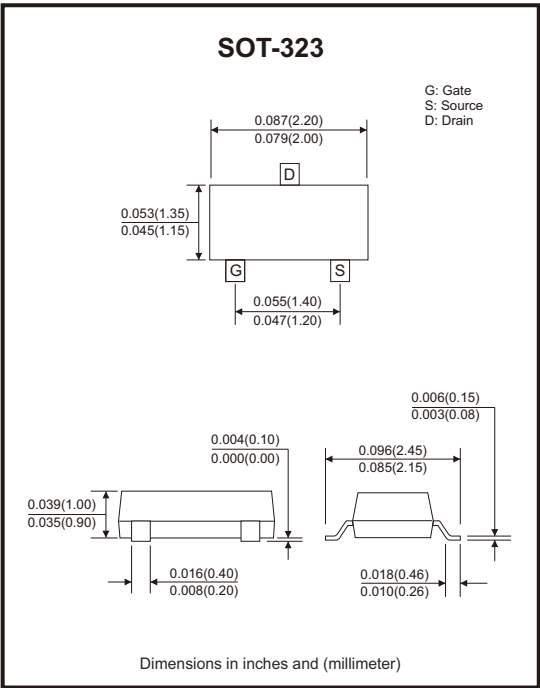
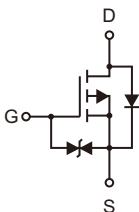
Features

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

Mechanical data

- Case: SOT-323, 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}	-50	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}	$V_{GS} = 0V, I_D = -250\mu A$	-50			V
Gate threshold voltage (Note 2)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.9	-1.7	-2	V
Gate-body leakage current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 10	μA
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -50V, V_{GS} = 0V$			-1	μA
Drain-source on-resistance (Note 2)	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -0.1A$		2.3	8	Ω
	$R_{DS(on)}$	$V_{GS} = -5V, I_D = -0.1A$		2.7	10	Ω
Diode forward voltage	V_{SD}	$V_{GS} = 0V, I_S = -0.13A$			-1.2	V
Forward transconductance (Note 2)	g_{FS}	$V_{DS} = -25V, I_D = -0.1A$	50			ms
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS} = -5V, V_{GS} = 0V, f = 1MHz$		22		pF
Output capacitance	C_{oss}			7.5		
Reverse transfer capacitance	C_{rss}			4		
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = -15V, I_D = -2.5A, R_L = 50\Omega$		1.85		ns
Turn-on rise time	t_r			0.7		
Turn-off delay time	$t_{d(off)}$			12		
Turn-off fall time	t_f			6		

Notes: 1. Pulse width limited by junction temperature.

2. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Typical Rating and Characteristic Curves (BSS84KW-P2-HF)

Fig.1 - Typical Output Characteristics

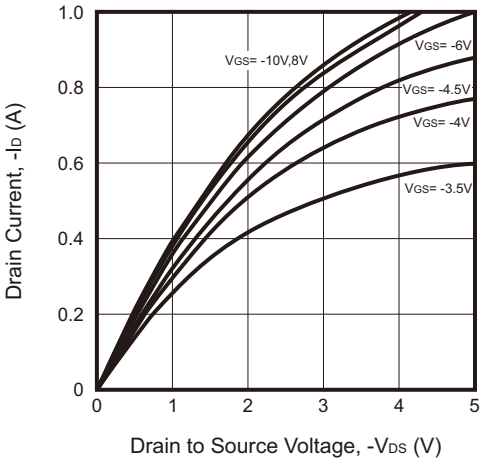


Fig.2 - Transfer Characteristics

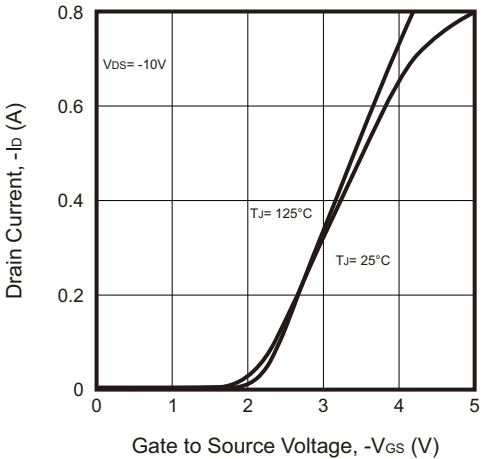


Fig.3 - On-Resistance vs. Drain Current

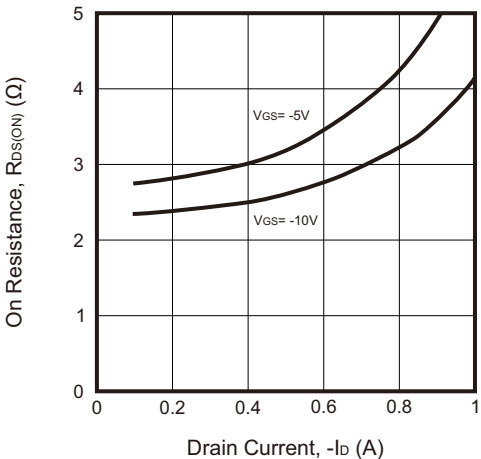


Fig.4 - On-Resistance vs. Gate to Source Voltage

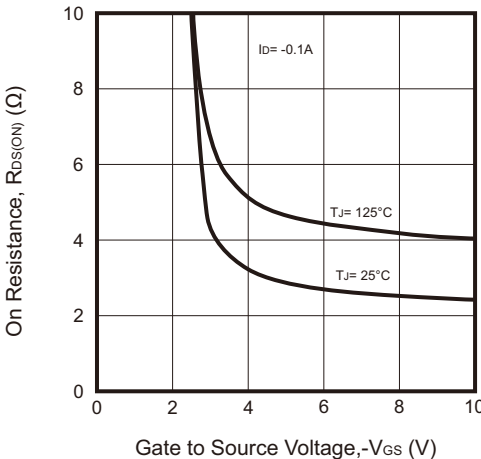


Fig.6 - I_S — V_{SD}

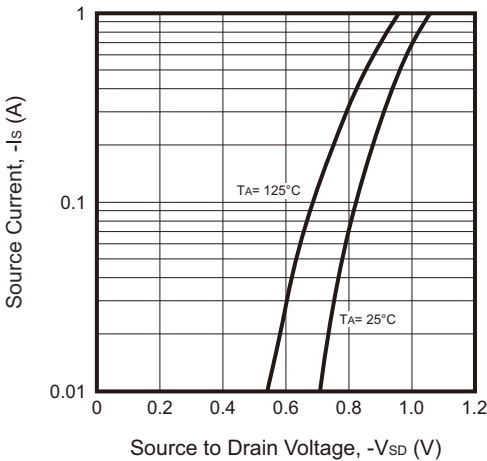
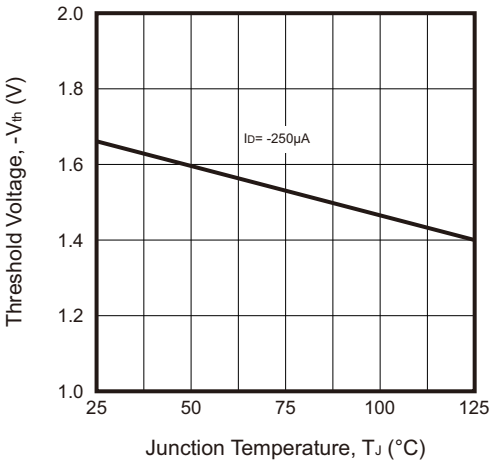
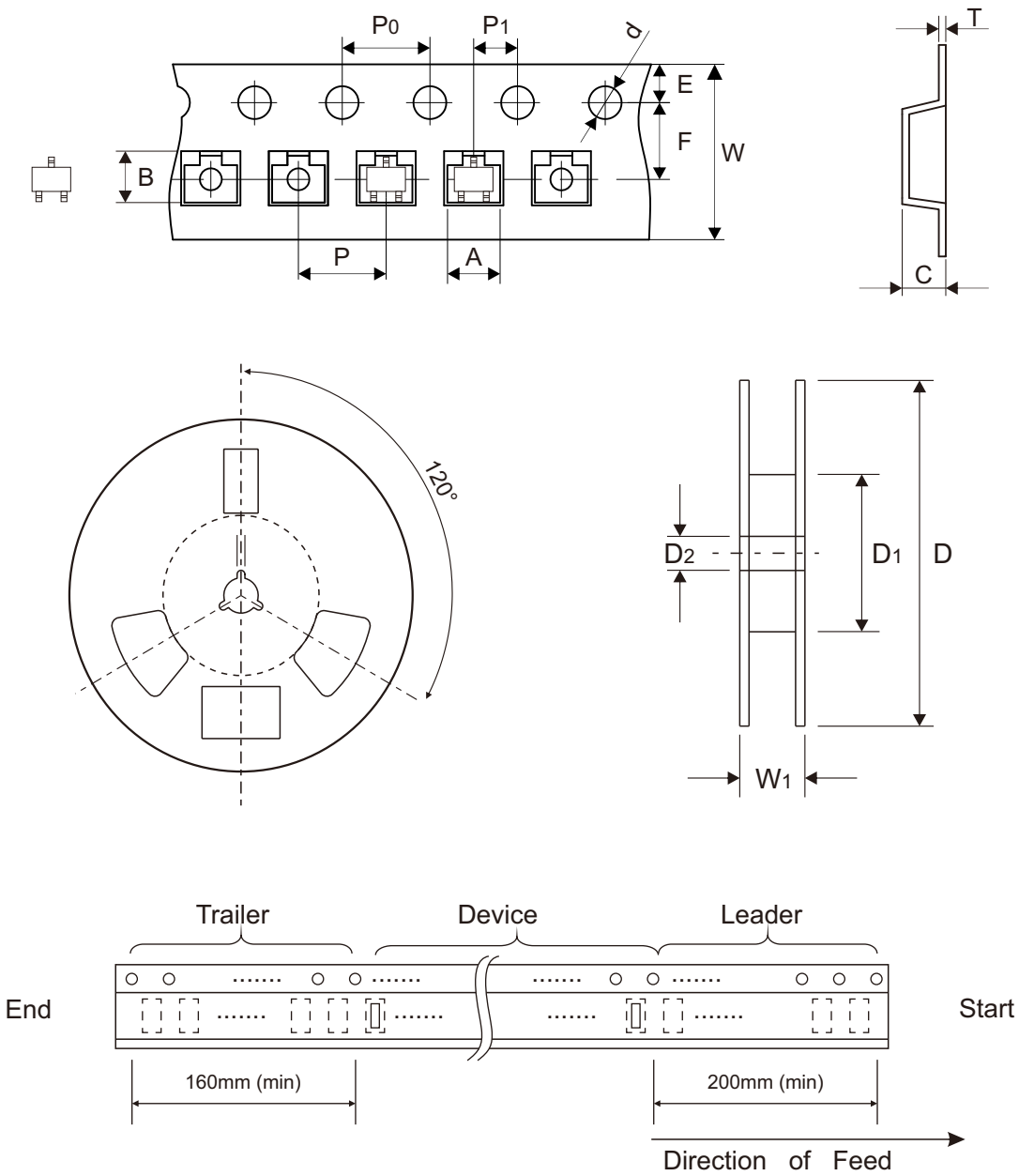


Fig.7 - Threshold Voltage



Reel Taping Specification



SOT-323	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	2.25 ± 0.10	2.55 ± 0.10	1.19 ± 0.10	1.50 + 0.10 - 0.00	178.00 ± 2.00	50.00 ± 0.50	13.00 ± 0.25
	(inch)	0.089 ± 0.004	0.100 ± 0.004	0.047 ± 0.004	0.059 + 0.004 - 0.000	7.008 ± 0.079	1.969 ± 0.020	0.512 ± 0.010

SOT-323	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.02	8.00 + 0.30 - 0.10	12.10 ± 1.50
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.001	0.315 + 0.012 - 0.004	0.476 ± 0.059

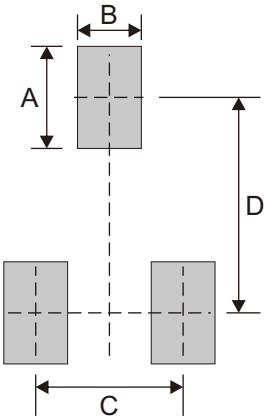
Marking Code

Part Number	Marking Code
BSS84KW-P2-HF	84K



Suggested P.C.B. PAD Layout

SIZE	SOT-323	
	(mm)	(inch)
A	0.80	0.031
B	0.50	0.020
C	1.30	0.051
D	2.20	0.087



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-323	3,000	7