

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-60V	4.2Ω@-10V	-0.13A
	4.5Ω@-4.5V	

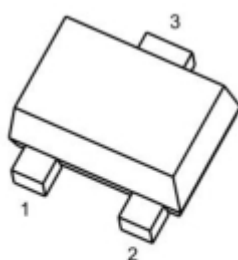
Feature

- Energy Efficient
- Low Threshold Voltage
- High-speed Switching
- ESD Protected

Application

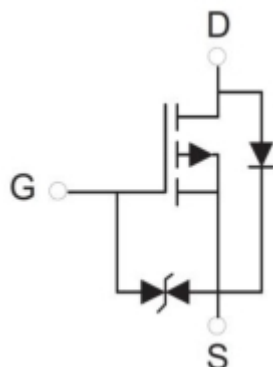
- DC-DC converters
- load switching
- power management in portable
- battery-powered products

Package

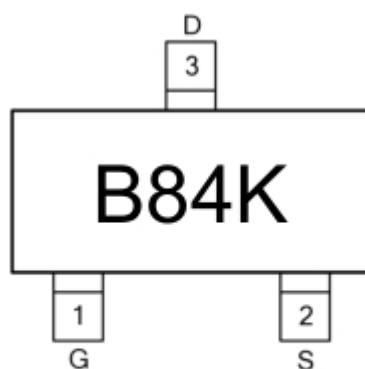


SOT-723

Circuit diagram



Marking



B84K =Device Code

Absolute maximum ratings

($T_a=25^{\circ}\text{C}$ 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@ $t_p < 10\mu\text{s}$	I_{DM}	-0.52	A
Power Dissipation	P_D	0.2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

Electrical characteristics

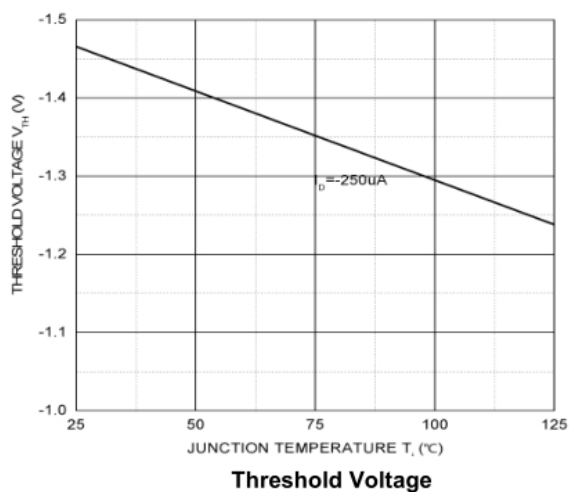
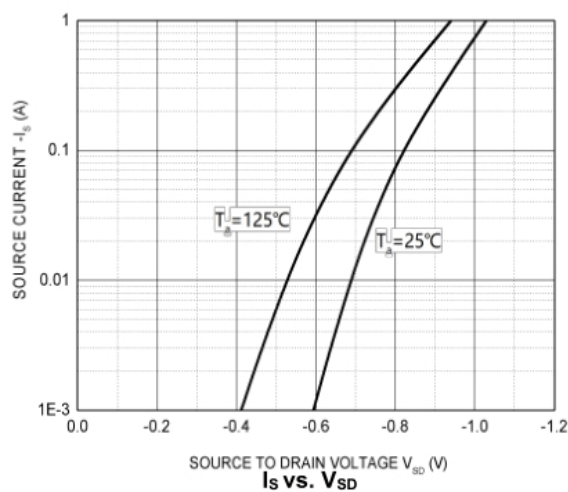
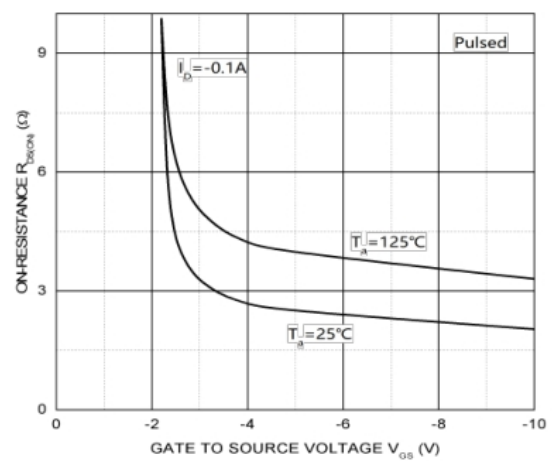
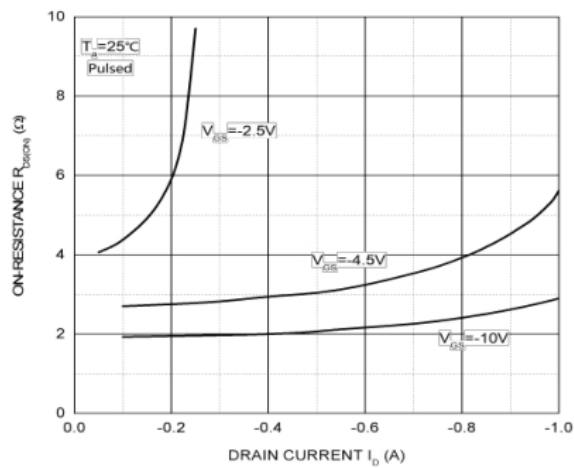
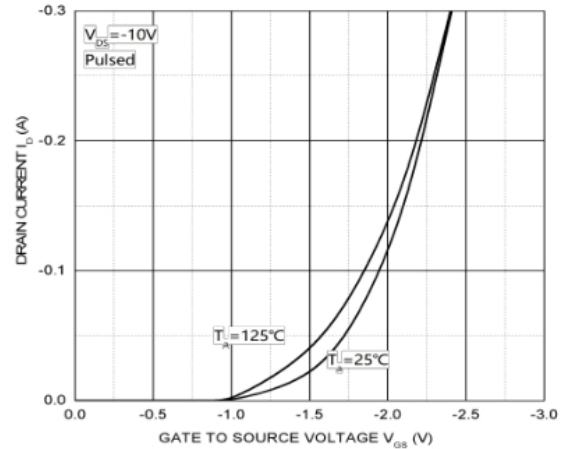
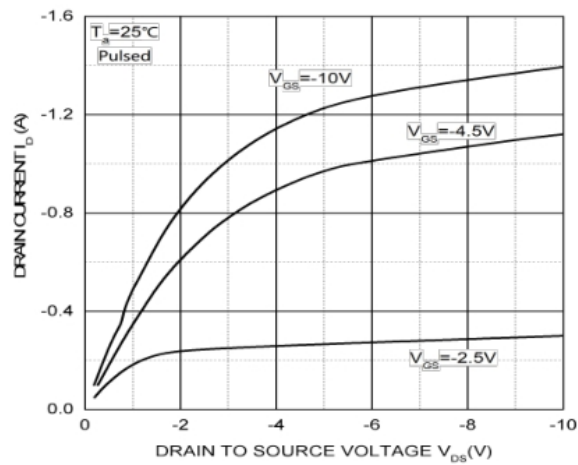
(T_A=25°C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-60			V
Drain Leakage Current	I _{DSS}	V _{DS} = -48V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±10	μA
Gate threshold voltage ³⁾	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.8	-1.5	-2.5	V
Drain-source on-resistance ³⁾	R _{DS(on)}	V _{GS} = -10V, I _D = -0.15A		4.2	6	Ω
		V _{GS} = -4.5V, I _D = -0.15A		4.5	7	
Dynamic characteristics ⁴⁾						
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 ⁴⁾						
Turn-on delay time	t _{d(on)}	V _{DD} = -15 V,R _L =50Ω, I _D =-2.5A,		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		
Source-Drain Diode Characteristics						
Diode Forward voltage	V _{SD}	V _{GS} =0V, I _S = -0.5A			-1.3	V

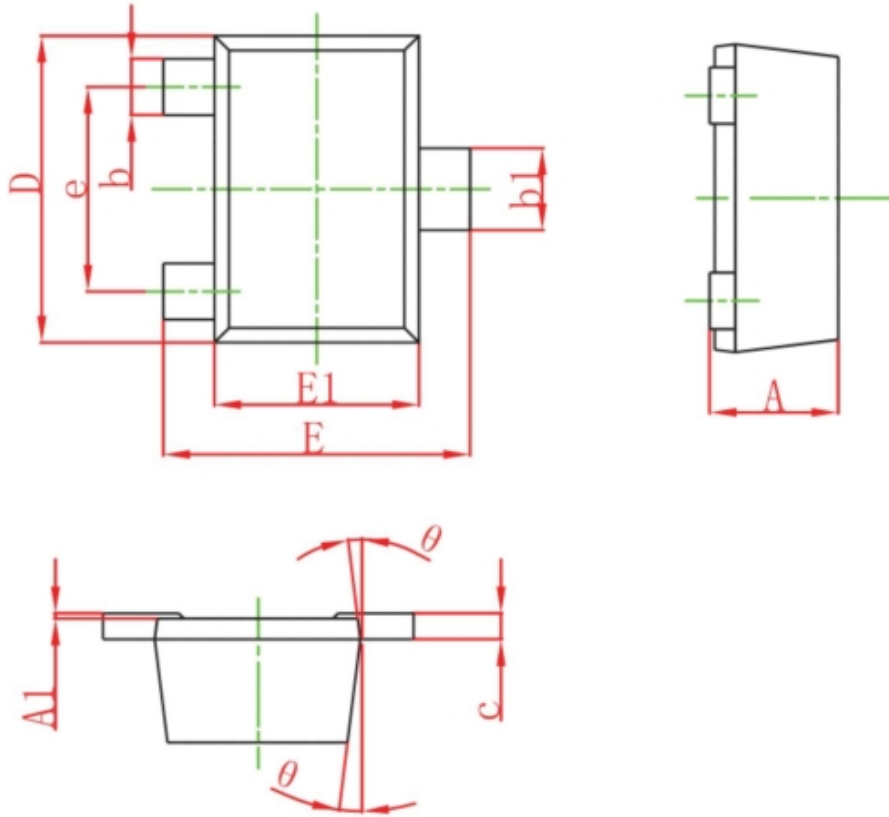
Notes:

- 1.Repetitive rating: Pulse width limited by junction temperature.
- 2.Surface mounted on FR4 board, t ≤ 10s.
- 3.Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
- 4.Guaranteed by design, not subject to production.

Typical Characteristics



SOT-723 Package Information



Symbol	Dimensions In Millimeters	
	Min	Max
A	0.430	0.500
A1	0.000	0.050
b	0.170	0.270
b1	0.270	0.370
C	0.080	0.150
D	1.150	1.250
E	1.150	1.250
E1	0.750	0.850
e	0.800 Typ.	
θ	7°Ref.	