



DESCRIPTION

P-Channel MOSFET

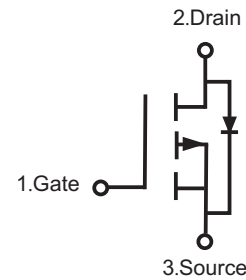
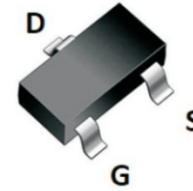
FEATURES

- -50V, -0.13A
 $R_{DS(ON)}=8.0\Omega @V_{GS}=-10V$
 $R_{DS(ON)}=10.0\Omega @V_{GS}=-5V$
- Energy Efficient
- Low Threshold Voltage
- High-speed Switching
- Miniature Surface Mount Package Saves Board Space

APPLICATION

- DC-DC converters, load switching, power management in portable and battery-powered products such as computers, printers, cellular and cordless telephones.

SOT-23



Absolute Maximum Ratings (TA=25°C, unless otherwise specified)

Parameter	Symbols	Ratings	Units
Drain-Source Voltage	V_{DSS}	-50	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	I_D	-0.13	A
Pulsed Drain Current ⁽¹⁾ @tp<10uS	I_{DM}	-0.52	A
Power Dissipation	P_D	225	mW
Thermal Resistance - Junction to Ambient ⁽²⁾	$R_{\theta JA}$	556	°C/W
Operation Junction Temperature and Storage Temperature	T_j, T_{stg}	-55~+150	°C

Notes:

1. Repetitive rating:Pulse width limited by junction temperature.
2. Surface mounted on FR4 board,t \leq 10s.



Electrical Characteristics (TA=25°C, unless otherwise specified)

Parameter	Symbols	Text conditions	Min	Typ	Max	Units
Static Characteristics						
Drain-Source Breakdown Voltage	$B_{V_{DS}}$	$V_{GS}=0V, I_D=-250\mu A$	-50			V
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 5	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-50V, V_{GS}=0V$			-15	μA
		$V_{DS}=-25V, V_{GS}=0V,$			-0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.9	-1.6	-2.0	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-5V, I_D=-0.1A$		5.8	10	Ω
		$V_{GS}=-10V, I_D=-0.1A$		4.5	8	Ω
Forward Transconductance	g_{FS}	$V_{DS}=-25V, I_D=-100mA$	50			mS
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=5V,$ $V_{GS}=0V,$ $f=1.0MHz$		30		pF
Output Capacitance	C_{oss}			10		pF
Reverse Transfer Capacitance	C_{rss}			5		pF
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-15V, R_L=50\Omega,$ $I_D=-2.5A$		2.5		ns
Turn-On Rise Time	t_r			1		ns
Turn-Off Delay Time	$t_{d(off)}$			16		ns
Turn-Off Fall Time	t_f			8		ns
Source-Drain Diode Characteristics						
Continuous Current	I_S				-0.13	A
Pulsed Current	I_{SM}				-0.52	A
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-0.13A$			-2.2	V



Typical Performance Characteristics

Figure1: Output Characteristics

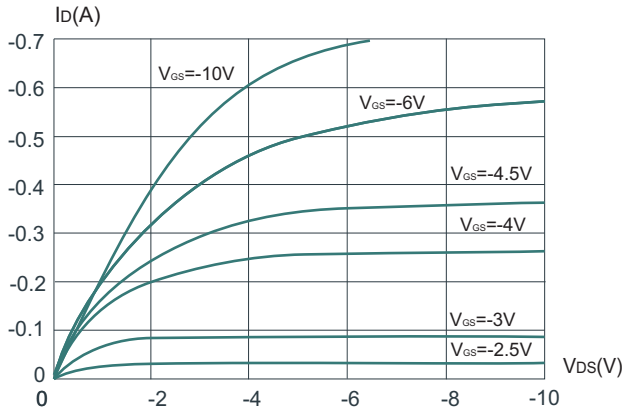


Figure2: Transfer Characteristics

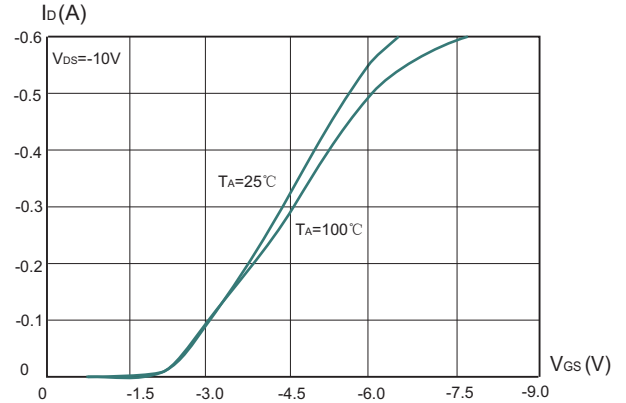


Figure 3: $R_{DS(ON)}$ VS I_D

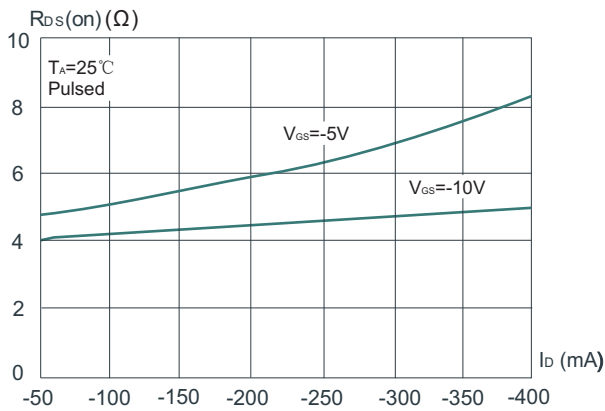


Figure 4: $R_{DS(ON)}$ VS V_{GS}

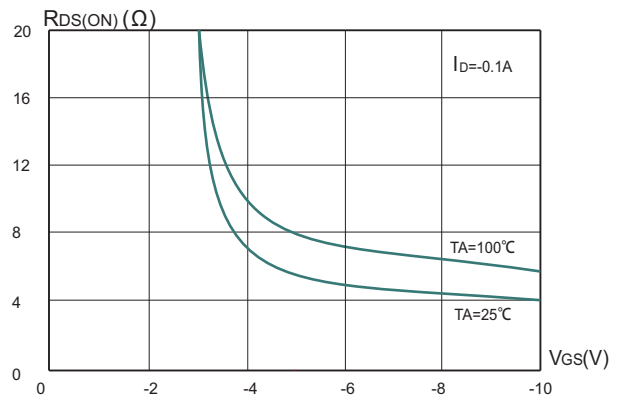


Figure 5: I_S VS V_{SD}

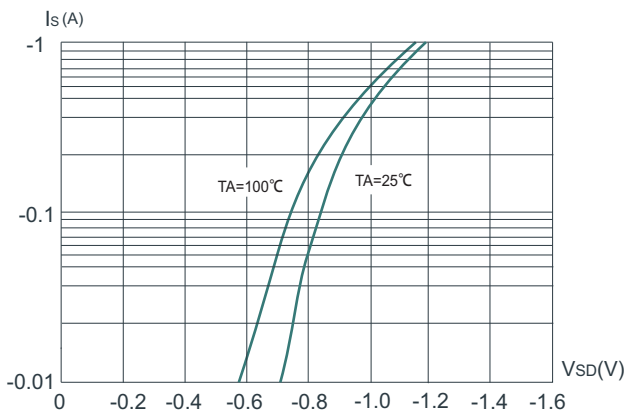
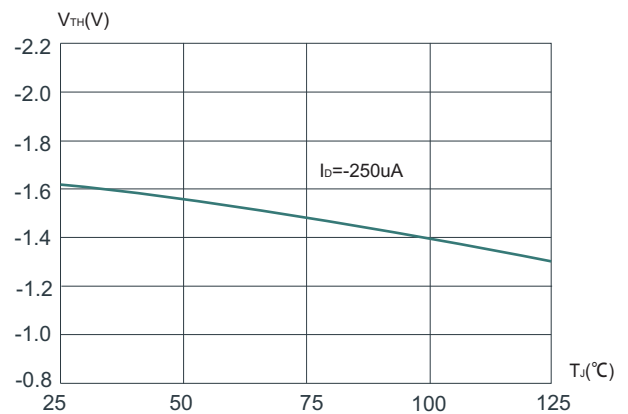
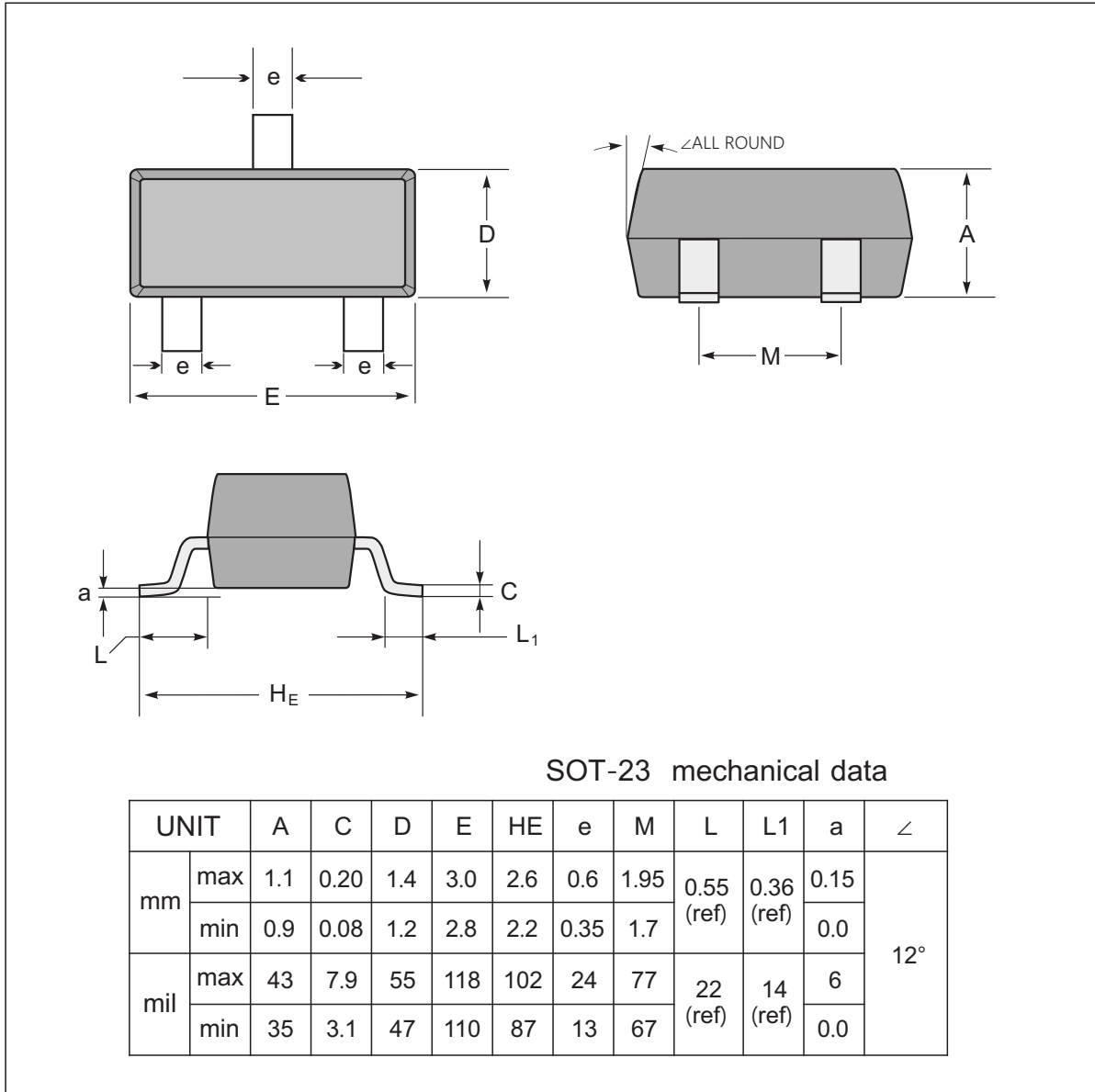


Figure 6: Threshold Voltage

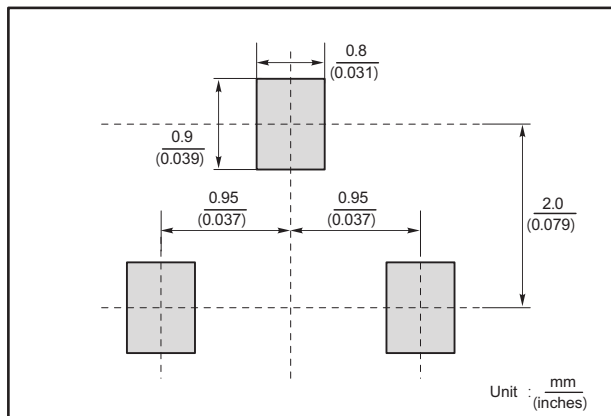




SOT-23 Package Outline Dimensions



The recommended mounting pad size



Marking

Type number	Marking code
BSS84	B84