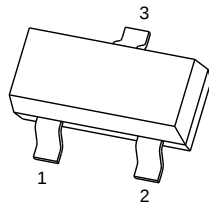


FEATURE

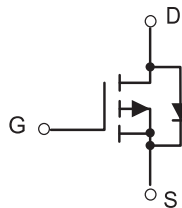
- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability

SOT-23



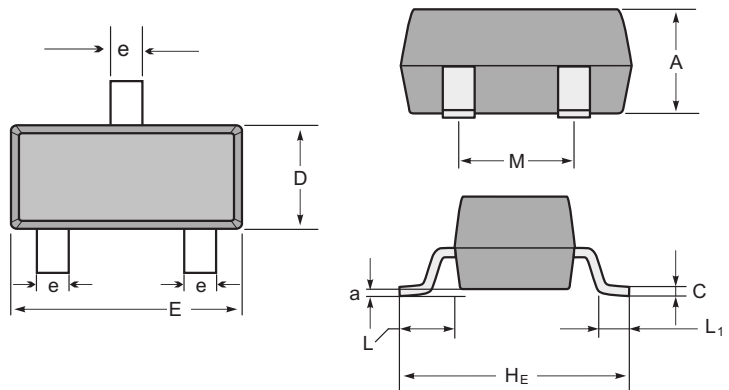
1. GATE
2. SOURCE
3. DRAIN

Equivalent Circuit



Marking

Type number	Marking code
BSS84	PD



SOT-23 mechanical data

UNIT		A	C	D	E	H _E	e	M	L	L ₁	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ 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) @ $t_p < 10 \mu\text{s}$	I_{DM}	-0.52	A
Power Dissipation	P_D	225	mW
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^\circ\text{C}$
Maximum Lead Temperature for Soldering Purposes , Duration for 5 Seconds	T_L	260	$^\circ\text{C}$

BSS84

T_a=25 °C unless otherwise specified

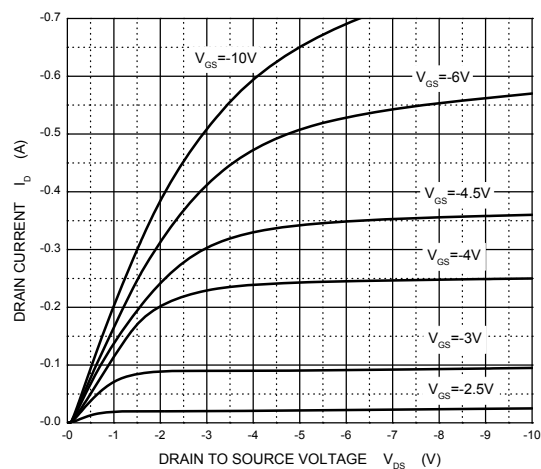
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-50			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-50V,V _{GS} = 0V			-15	μA
		V _{DS} =-25V,V _{GS} = 0V			-0.1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V			±5	μA
Gate threshold voltage (note 3)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.9	-1.6	-2	V
Drain-source on-resistance (note 3)	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 (note 1)	g _{FS}	V _{DS} =-25V; I _D =-100mA	50			mS
DYNAMIC CHARACTERISTICS (note 4)						
Input capacitance	C _{iss}	V _{DS} =5V,V _{GS} =0V,f =1MHz		30		pF
Output capacitance	C _{Oss}			10		pF
Reverse transfer capacitance	C _{rss}			5		pF
SWITCHING CHARACTERISTICS (note 4)						
Turn-on delay time	t _{d(on)}	V _{DD} =-15V, R _L =50Ω, 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
Diode forward voltage (note 3)	V _{SD}	I _S =-0.13A, V _{GS} = 0V			-2.2	V

Notes :

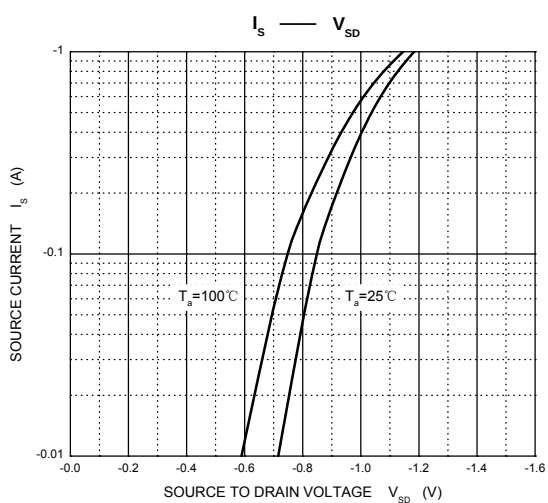
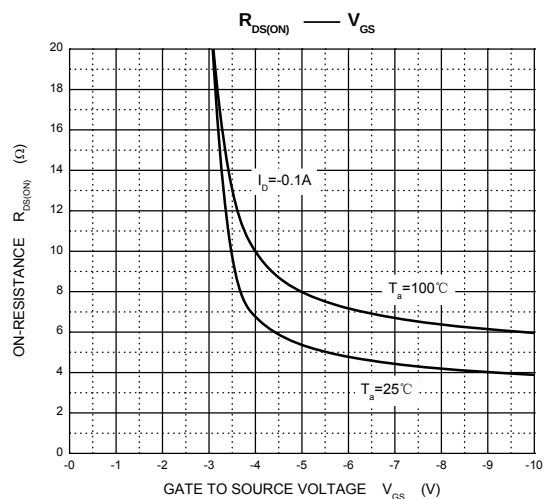
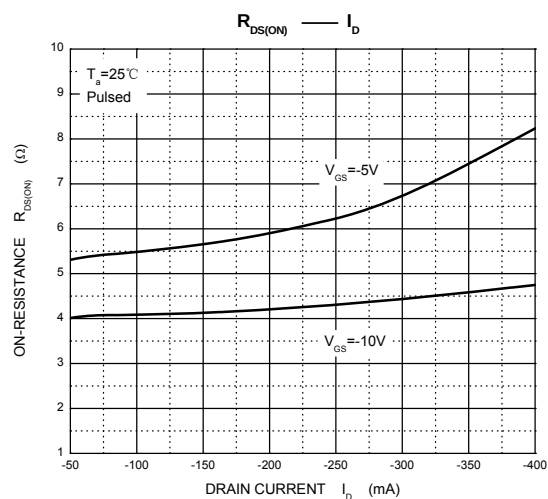
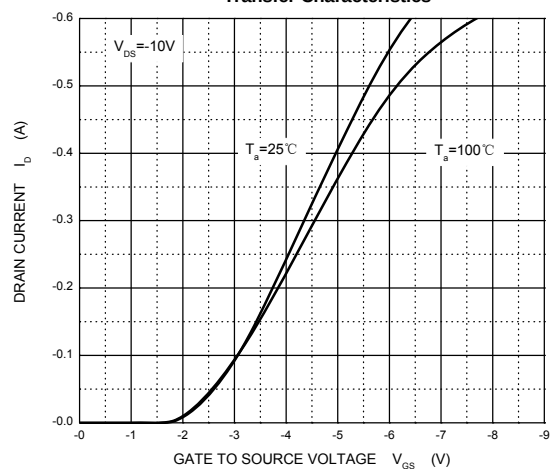
1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board , t≤10s.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤2%.
4. Guaranteed by design, not subject to producing.

RATING AND CHARACTERISTIC CURVES (BSS84)

Output Characteristics



Transfer Characteristics



Threshold Voltage

