

-50V P-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

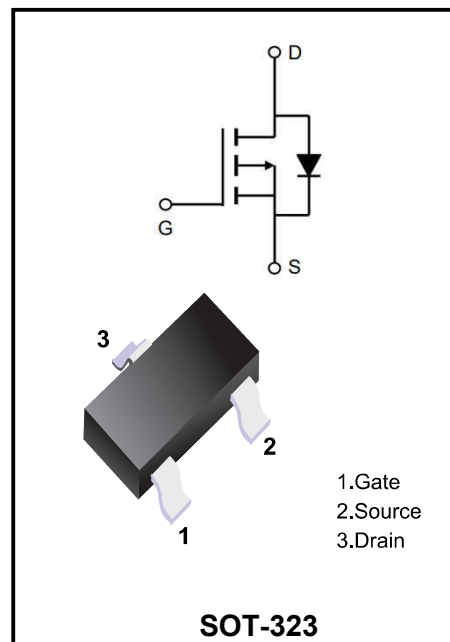
I_D	-0.13A
V_{DSS}	-50V
$R_{DS(on)-typ}(@V_{GS}=-10V)$	$< 8\Omega$
$R_{DS(on)-typ}(@V_{GS}=-5V)$	$< 10\Omega$

FEATURE

- ◆Energy Efficient
- ◆Low Threshold Voltage
- ◆High-speed Switching.
- ◆DC/DC Converter.

Mechanical Data

- ◆SOT-323 Small Outline Plastic Package.
- ◆Epoxy UL: 94V-0.
- ◆Mounting Position: Any.



Marking Code

BSS84W	B84
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Maximum Ratings & Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

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 @tp < 10 μ s (note 1)	I_{DM}	-0.52	A
Power Dissipation	P_D	225	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~+150	°C
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	556	°C/W
Maximum Lead Temperature for Soldering Purposes , Duration for 5 Seconds	T_L	260	°C

Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified).

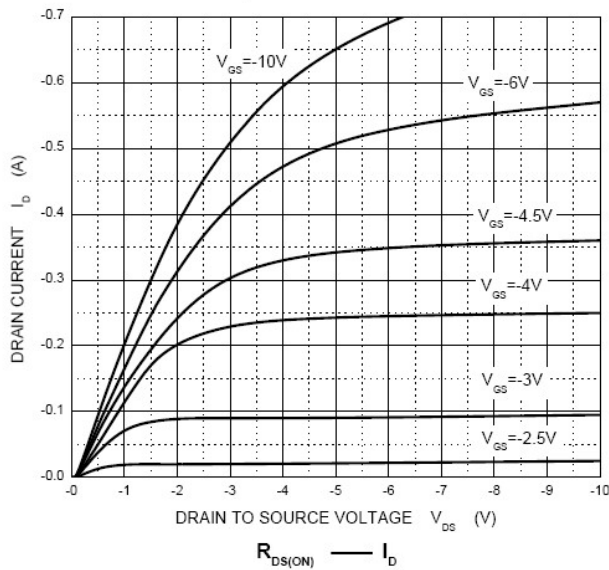
Parameter	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-source breakdown voltage	$V_{GS} = 0V, I_D = -250\mu A$	BV_{DSS}	-50	-	-	V
Gate threshold voltage (note 3)	$V_{DS} = V_{GS}, I_D = -250\mu A$	$V_{GS(th)}$	-0.8	-	-2	V
Gate-body leakage current	$V_{GS} = \pm 20V, V_{DS} = 0V$	I_{GSS}	-	-	± 10	μA
Zero gate voltage drain current	$V_{DS} = -50V, V_{GS} = 0V$	I_{DSS}	-	-	-15	μA
	$V_{DS} = -25V, V_{GS} = 0V$		-	-	-0.1	μA
Drain-source on-resistance (note 3)	$V_{GS} = -5V, I_D = -0.1A$	$R_{DS(ON)}$	-	-	10	Ω
	$V_{GS} = -10V, I_D = -0.1A$		-	-	8	Ω
Forward transconductance (note 1)	$V_{DS} = -25V, I_D = -100mA$	g_{FS}	50	-	-	mS
Diode forward voltage	$I_S = 0.34A, V_{GS} = 0V$	V_{SD}	-	-	1.3	V
Input capacitance	$V_{DS} = 5V,$ $V_{GS} = 0V,$ $f = 1MHz$	C_{iss}	-	30	-	pF
Output capacitance		C_{oss}	-	10	-	pF
Reverse transfer capacitance		C_{rss}	-	5	-	pF
Turn-on delay time	$V_{DD} = -15V,$ $R_L = 50\Omega,$ $I_D = -2.5A$	$t_{d(on)}$	-	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
Continuous Current		I_S	-	-	-0.13	A
Pulsed Current		I_{SM}	-	-	-0.52	A
Diode forward voltage (note 3)	$I_S = 0.34A, V_{GS} = 0V$	V_{SD}	-	-	-2.2	V

Notes :

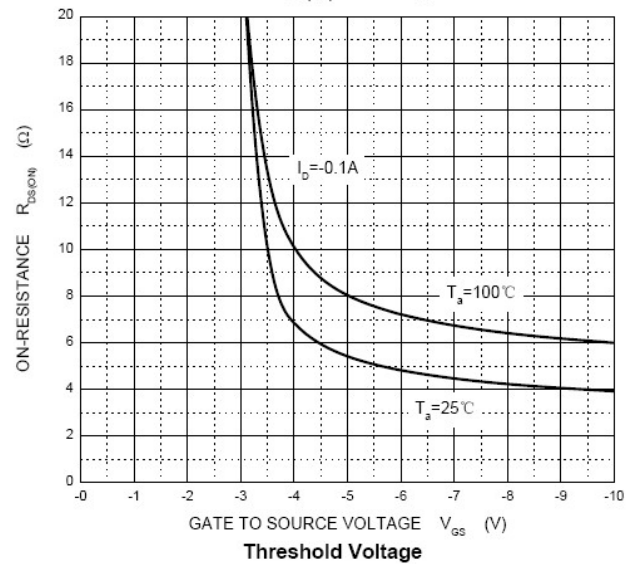
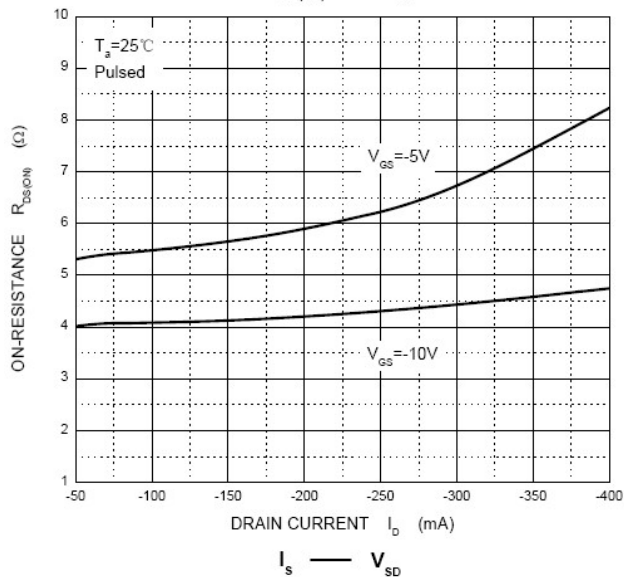
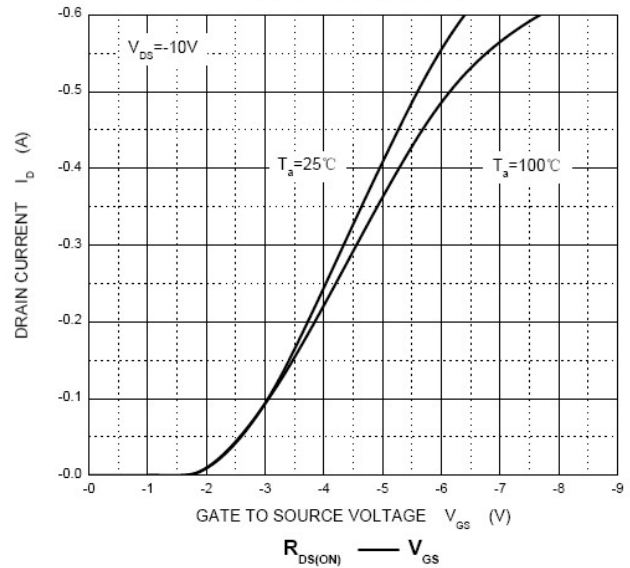
1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board , $t \leq 10s$.
3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

Typical Characteristics

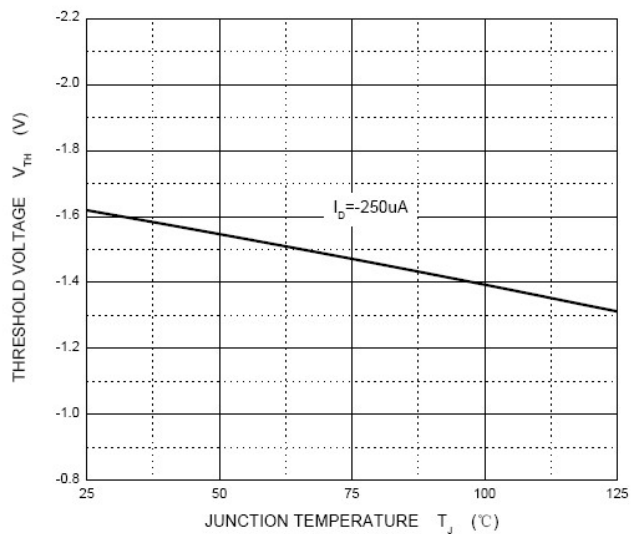
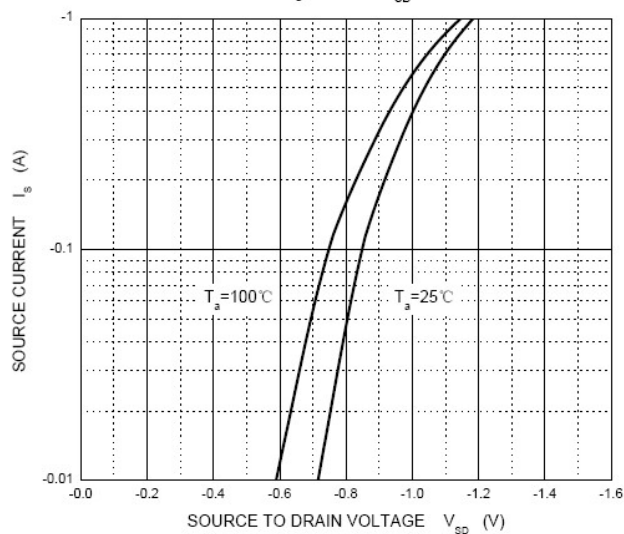
Output Characteristics



Transfer Characteristics



Threshold Voltage



Ordering information

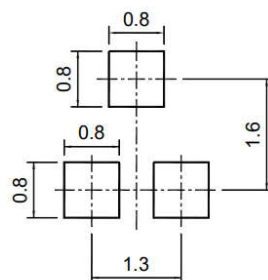
Package	Packing Description	Base Quantity	Packing Quantity
SOT-323	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT-323

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.8	1.1	32	43
A1	0.1		4	
bp	0.3	0.4	12	16
C	0.10	0.25	4	10
D	1.8	2.2	71	87
E	1.15	1.35	45	53
E	1.3		51	
E1	0.65		26	
HE	2.0	2.2	79	87
Lp	0.15	0.45	6	18
Q	0.13	0.23	5.1	9
v	0.2		8	
W	0.2		8	

The recommended mounting pad size



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