



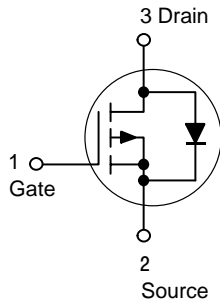
Power MOSFET

F30 mAmps, 50 Volts

P-Channel SOT-23

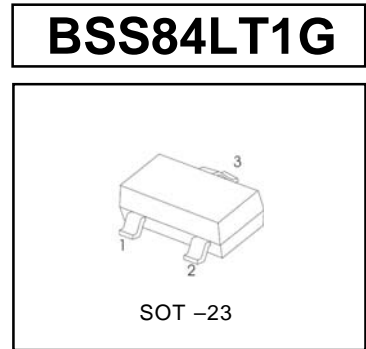
These miniature surface mount MOSFETs reduce power loss conserve energy, making this device ideal for use in small power management circuitry. Typical applications are dc-dc converters, load switching, power management in portable and battery-powered products such as computers, printers, cellular and cordless telephones.

- Energy Efficient
- Miniature SOT-23 Surface Mount Package Saves Board Space
- Pb-Free Package is available.

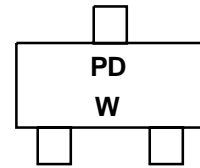


MAXIMUM RATINGS (T_J = 25°C unless otherwise noted)

Rating	Symbol	Value	Unit
Drain-to-Source Voltage	V _{DSS}	50	V _{dc}
Gate-to-Source Voltage – Continuous	V _{GS}	± 20	V _{dc}
Drain Current			mA
– Continuous @ T _A = 25°C	I _D	130	
– Pulsed Drain Current (t _p ≤ 10 μs)	I _{DM}	520	
Total Power Dissipation @ T _A = 25°C	P _D	225	mW
Operating and Storage Temperature Range	T _J , T _{stg}	– 55 to 150	°C
Thermal Resistance – Junction-to-Ambient	R _{θJA}	556	°C/W
Maximum Lead Temperature for Soldering Purposes, for 10 seconds	T _L	260	°C



Marking Diagram



W = Work Week

ORDERING INFORMATION

Device	Package	Shipping
BSS84LT1G	SOT-23	3000/Tape&Reel
BSS84LT3G	SOT-23	10000/Tape&Reel



BSS84LT1G

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Drain-to-Source Breakdown Voltage ($V_{GS} = 0\text{ Vdc}$, $I_D = 250\ \mu\text{Adc}$)	$V_{(BR)DSS}$	50	-	-	Vdc
Zero Gate Voltage Drain Current ($V_{DS} = 25\text{ Vdc}$, $V_{GS} = 0\text{ Vdc}$) ($V_{DS} = 50\text{ Vdc}$, $V_{GS} = 0\text{ Vdc}$) ($V_{DS} = 50\text{ Vdc}$, $V_{GS} = 0\text{ Vdc}$, $T_J = 125^\circ\text{C}$)	I_{DSS}	-	-	0.1 15 60	μAdc
Gate-Body Leakage Current ($V_{GS} = \pm 20\text{ Vdc}$, $V_{DS} = 0\text{ Vdc}$)	I_{GSS}	-	-	± 60	μAdc

ON CHARACTERISTICS (Note 1.)

Gate-Source Threshold Voltage ($V_{DS} = V_{GS}$, $I_D = 1.0\text{ mAdc}$)	$V_{GS(th)}$	0.8	-	2.0	Vdc
Static Drain-to-Source On-Resistance ($V_{GS} = 5.0\text{ Vdc}$, $I_D = 100\text{ mAdc}$)	$r_{DS(on)}$	-	5.0	10	Ohms
Transfer Admittance ($V_{DS} = 25\text{ Vdc}$, $I_D = 100\text{ mAdc}$, $f = 1.0\text{ kHz}$)	$ y_{fs} $	50	-	-	mS

DYNAMIC CHARACTERISTICS

Input Capacitance	($V_{DS} = 5.0\text{ Vdc}$)	C_{iss}	-	30	-	pF
Output Capacitance	($V_{DS} = 5.0\text{ Vdc}$)	C_{oss}	-	10	-	
Transfer Capacitance	($V_{DG} = 5.0\text{ Vdc}$)	C_{rss}	-	5.0	-	

SWITCHING CHARACTERISTICS (Note 2.)

Turn-On Delay Time	$(V_{DD} = -15\text{ Vdc}$, $I_D = -2.5\text{ Adc}$, $R_L = 50\ \Omega$)	$t_{d(on)}$	-	2.5	-	ns
Rise Time		t_r	-	1.0	-	
Turn-Off Delay Time		$t_{d(off)}$	-	16	-	
Fall Time		t_f	-	8.0	-	
Gate Charge		Q_T	-	6000	-	pC

SOURCE-DRAIN DIODE CHARACTERISTICS

Continuous Current	I_S	-	-	0.130	A
Pulsed Current	I_{SM}	-	-	0.520	
Forward Voltage (Note 2.)	V_{SD}	-	2.5	-	V

1. Pulse Test: Pulse Width $\leq 300\ \mu\text{s}$, Duty Cycle $\leq 2\%$.
2. Switching characteristics are independent of operating junction temperature.

TYPICAL ELECTRICAL CHARACTERISTICS

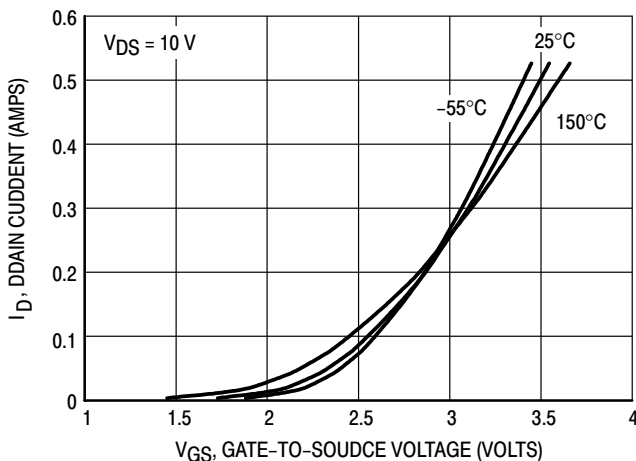


Figure 1. Transfer Characteristics

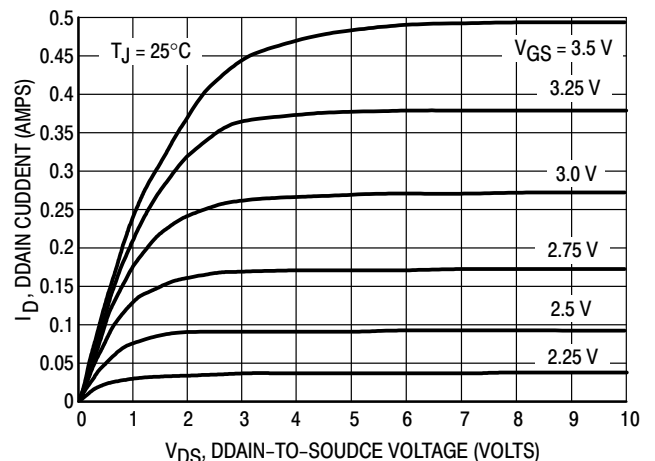


Figure 2. On-Region Characteristics



TYPICAL ELECTRICAL CHARACTERISTICS

BSS84LT1G

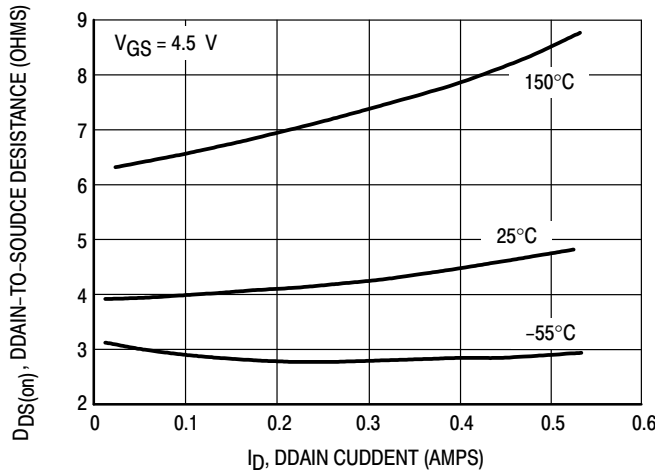


Figure 3. On-Resistance versus Drain Current

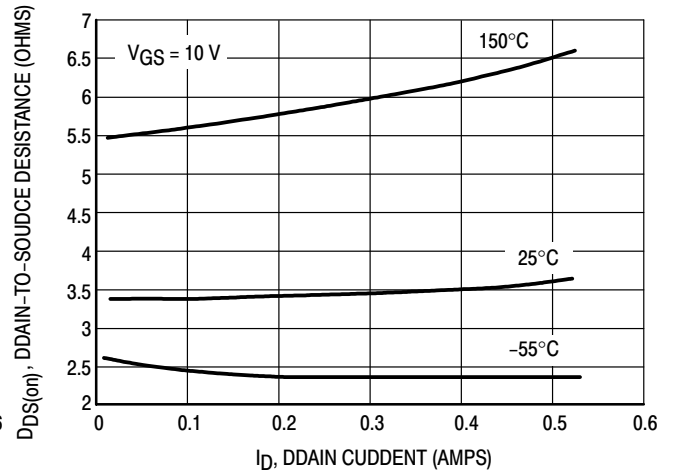


Figure 4. On-Resistance versus Drain Current

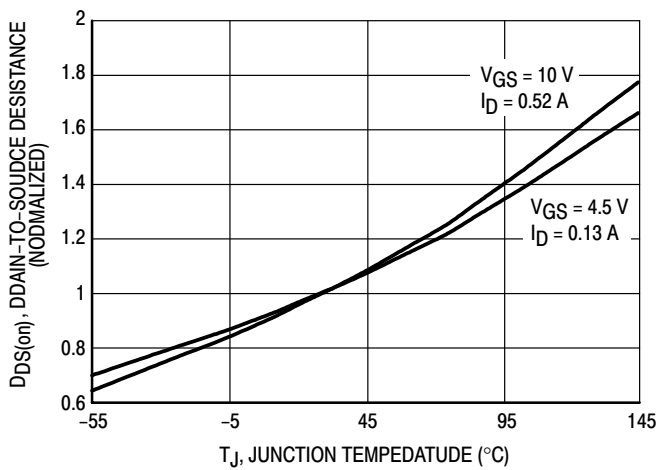


Figure 5. On-Resistance Variation with Temperature

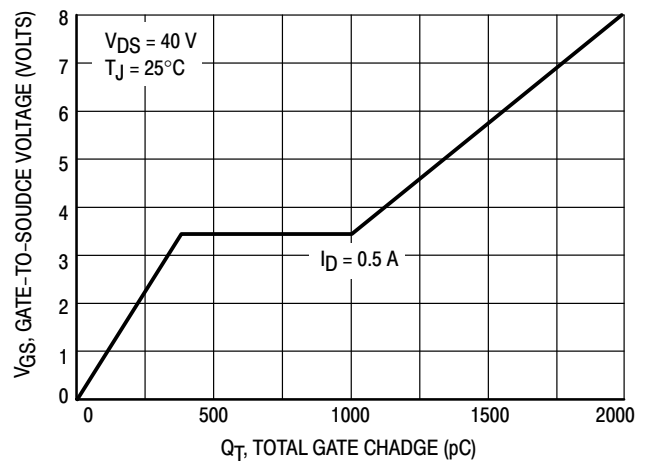


Figure 6. Gate Charge

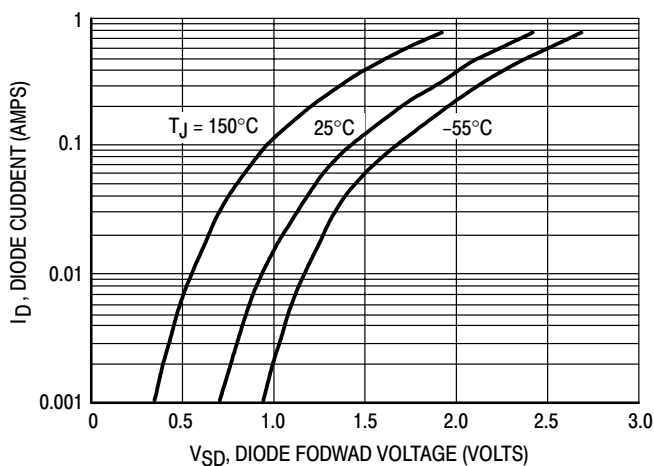


Figure 7. Body Diode Forward Voltage

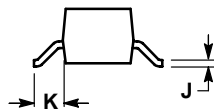
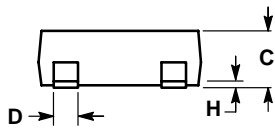
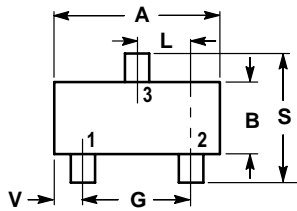


BSS84LT1G

SOT-23

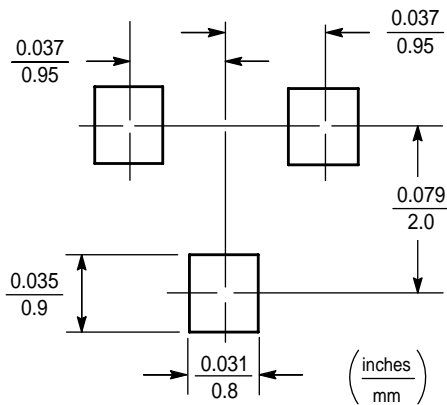
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982
2. CONTROLLING DIMENSION: INCH.



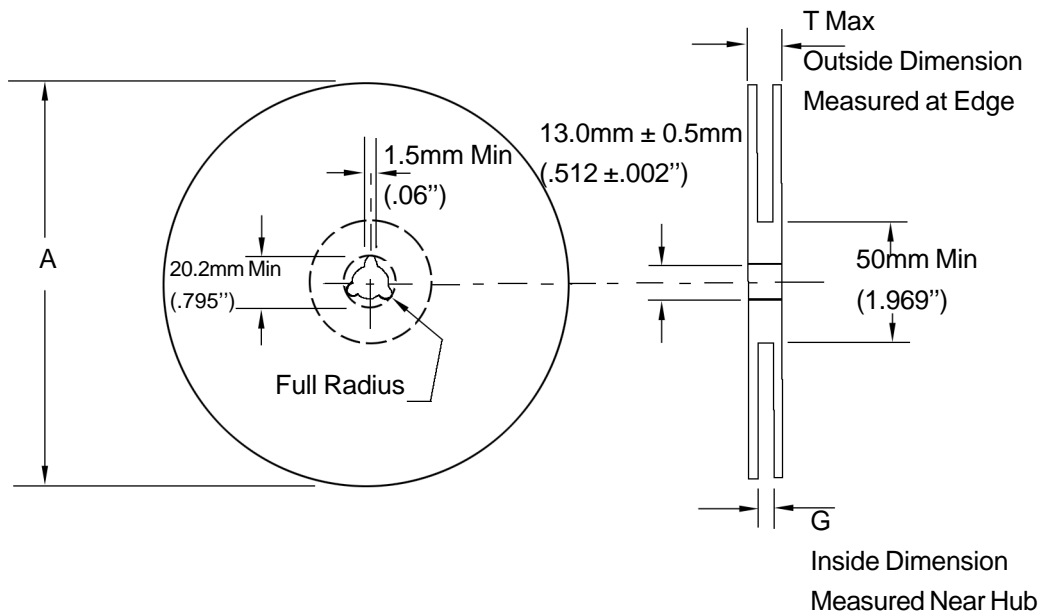
DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

- PIN 1. BASE
 2. EMITTER
 3. COLLECTOR





EMBOSSED TAPE AND REEL DATA FOR DISCRETES



Size	A Max	G	T Max
8 mm	330mm (12.992")	8.4mm+1.5mm, -0.0 (.33"+.059", -0.00)	14.4mm (.56")
12mm	330mm (12.992")	12.4mm+2.0mm, -0.0 (.49 "+ .079", -0.00)	18.4mm (.72")
16mm	360mm (14.173")	16.4mm+2.0mm, -0.0 (.646"+.078", -0.00)	22.4mm (.882")
24 mm	360mm (14.173")	24.4mm+2.0mm, -0.0 (.961"+.070", -0.00)	30.4mm (1.197")

Reel Dimensions

Metric Dimensions Govern — English are in parentheses for reference only

Storage Conditions

Temperature: 5 to 40 Deg.C (20 to 30 Deg. C is preferred)

Humidity: 30 to 80 RH (40 to 60 is preferred)

Recommended Period: One year after manufacturing

(This recommended period is for the soldering condition only. The characteristics and reliabilities of the products are not restricted to this limitation)

