

Power MOSFET

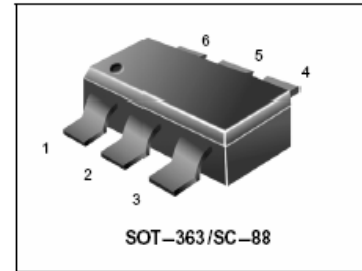
130 mAmps, 50 Volts

P-Channel SC88

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.

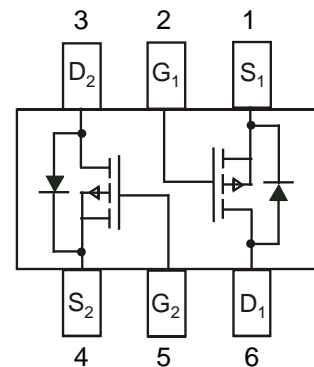
- Energy Efficient
- Miniature SC88 Surface Mount Package Saves Board Space
- Pb-Free Package is available.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

LBSS84DW1T1G
S-LBSS84DW1T1G



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	380	mW
Operating and Storage Temperature Range	T _J , T _{stg}	- 55 to 150	°C
Thermal Resistance – Junction-to-Ambient	R _{θJA}	328	°C/W
Maximum Lead Temperature for Soldering Purposes, for 10 seconds	T _L	260	°C



ORDERING INFORMATION

Device	Marking	Shipping
LBSS84DW1T1G S-LBSS84DW1T1G	PD	3000 Tape & Reel
LBSS84DW1T1G S-LBSS84DW1T1G	PD	10000 Tape & Reel

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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}	-	-	± 100	nAdc

ON CHARACTERISTICS (Note 1.)

Gate-Source Threshold Voltage ($V_{DS} = V_{GS}$, $I_D = -250\mu\text{Adc}$)	$V_{GS(th)}$	-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

DYNAMIC CHARACTERISTICS

Input Capacitance	($V_{DS} = -5.0\text{ Vdc}$)	C_{iss}	-	42	-	pF
Output Capacitance	($V_{DS} = -5.0\text{ Vdc}$)	C_{oss}	-	20	-	
Transfer Capacitance	($V_{DG} = -5.0\text{ Vdc}$)	C_{rss}	-	4	-	

SWITCHING CHARACTERISTICS (Note 2.)

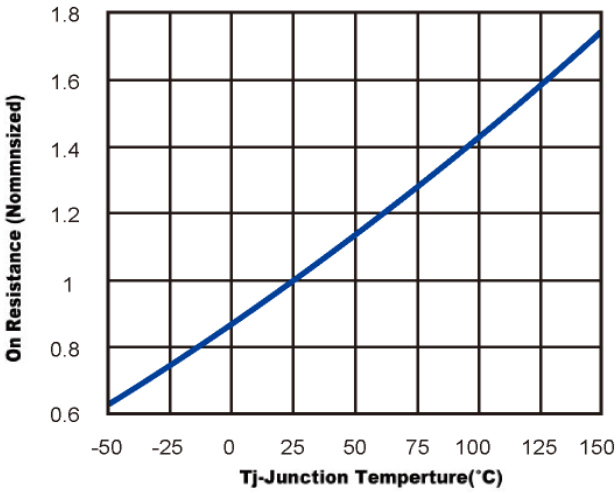
Turn-On Delay Time	$(V_{DS} = -15\text{ V}$, $V_{GS} = -10\text{ V}$ $R_L = 50\ \Omega$, $R_G = 25\ \Omega)$	$t_{d(on)}$	-	16.7	-	ns
Rise Time		t_r	-	8.6	-	
Turn-Off Delay Time		$t_{d(off)}$	-	17.9	-	
Fall Time		t_f	-	5.3	-	
Gate Charge		Q_T	-	6000	-	pC

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

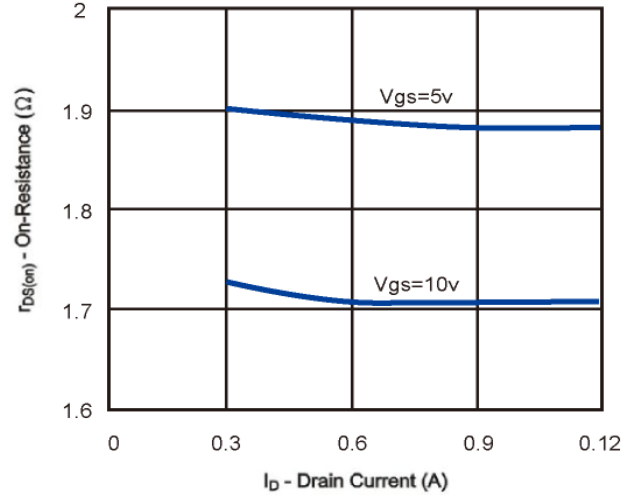
LBSS84DW1T1G , S-LBSS84DW1T1G

Typical Characteristics (TA =25°C Noted)

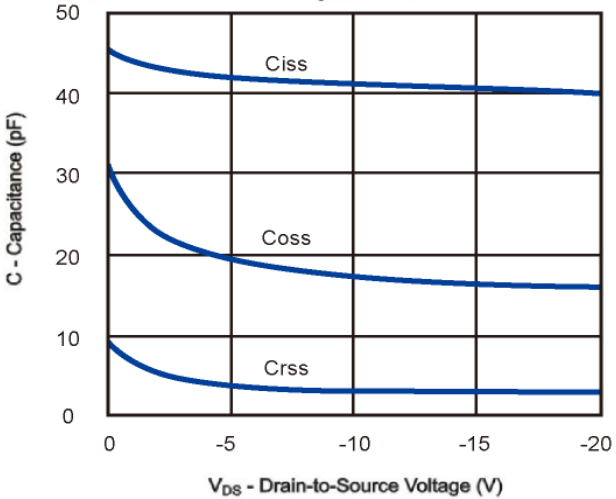
On Resistance vs. Junction Temperature



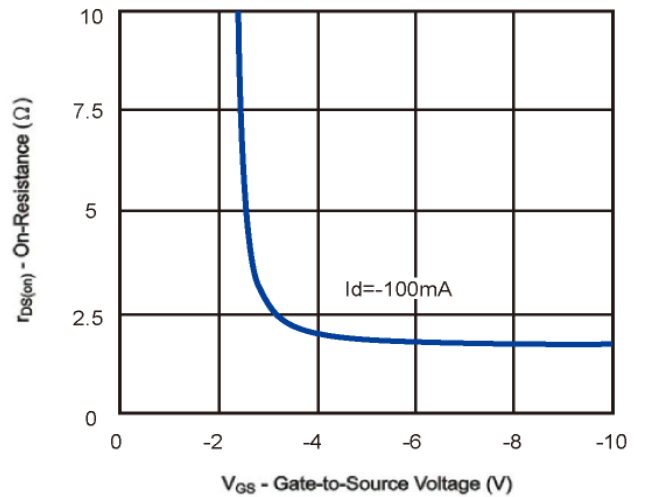
On-Resistance vs. Drain Current



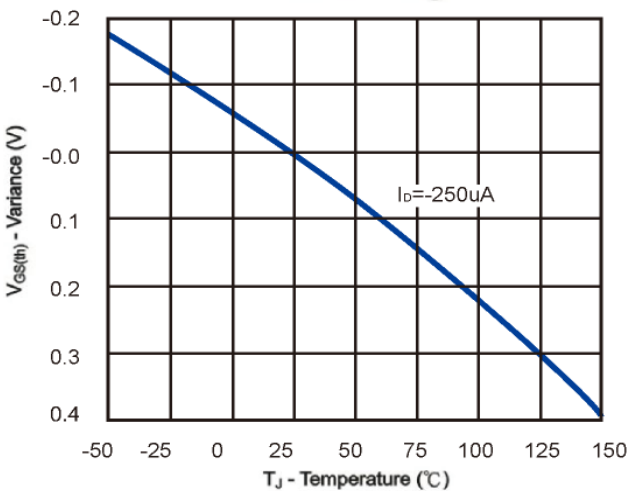
Capacitance



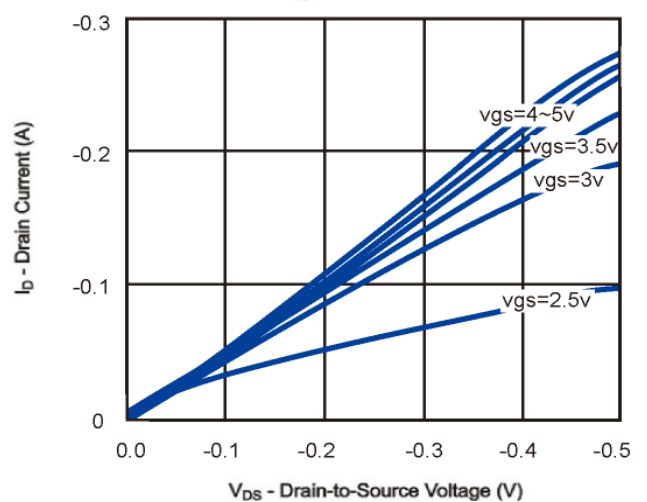
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage

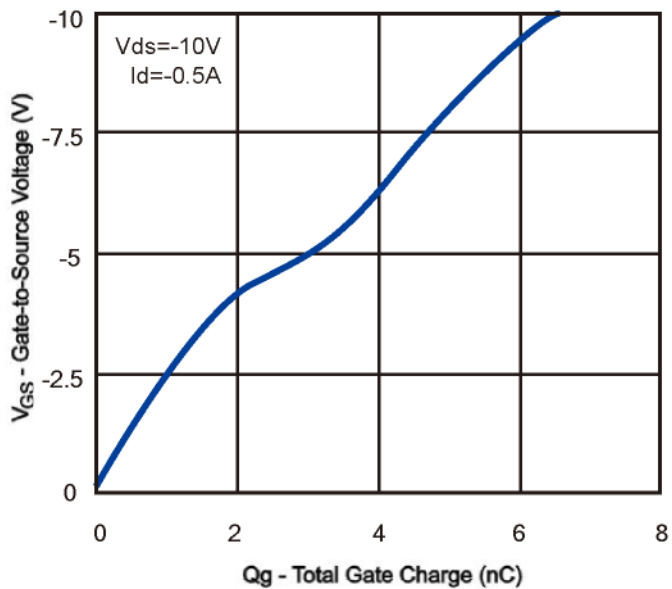


On-Region Characteristics

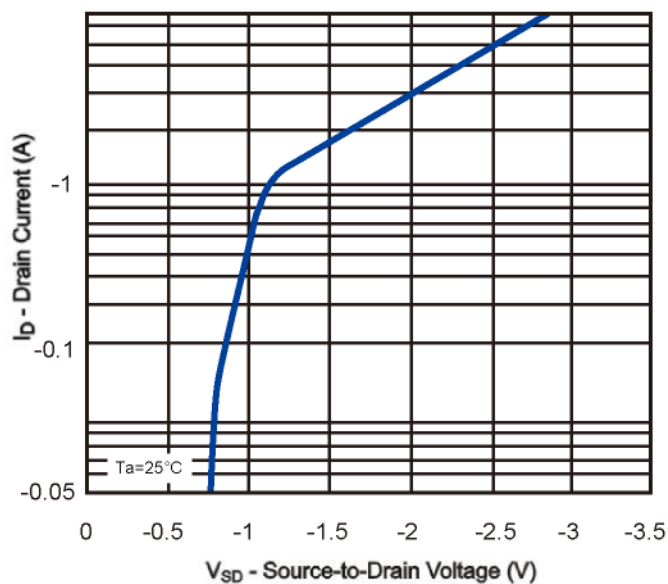


LBSS84DW1T1G , S-LBSS84DW1T1G

Typical Characteristics (T =25°C Noted)
Gate Charge

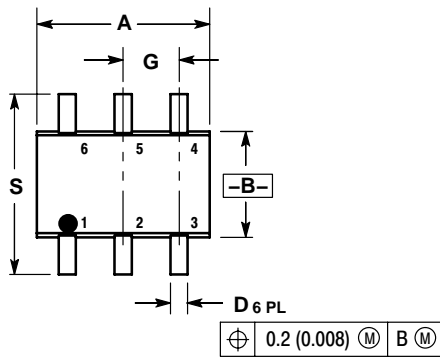


On-Resistance vs. Drain Current



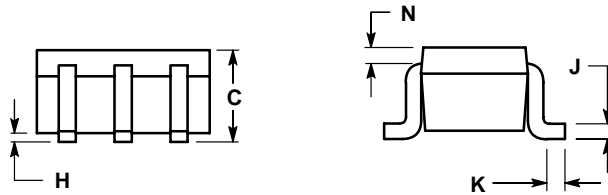
LBSS84DW1T1G , S-LBSS84DW1T1G

SC-88 (SOT-363)

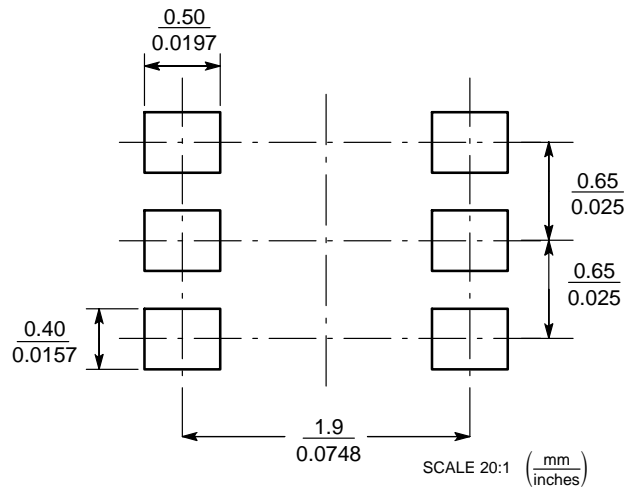


- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. 419B-01 OBSOLETE, NEW STANDARD 419B-02.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.031	0.043	0.80	1.10
D	0.004	0.012	0.10	0.30
G	0.026	BSC	0.65	BSC
H	---	0.004	---	0.10
J	0.004	0.010	0.10	0.25
K	0.004	0.012	0.10	0.30
N	0.008	REF	0.20	REF
S	0.079	0.087	2.00	2.20



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