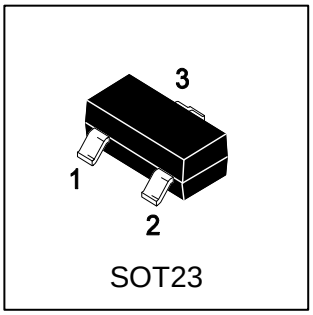
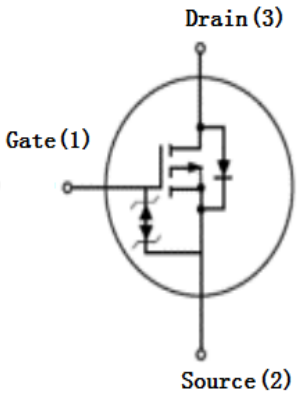
LBSS84ELT1G

Power MOSFET 50 Volts P–Channel



SOT23



1. FEATURES

- Advanced trench cell design.
- High speed switch.
- ESD Protected: ±1000V
- Pb-Free Package is available.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

2. APPLICATIONS

- Portable appliances.
- Load switch appliances.

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LBSS84ELT1G	PE	3000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	-50	V
Gate–to–Source Voltage	VGSS	±20	V
Drain Current – Continuous TA = 25°C – Pulsed (tp≤10μs)	 ID IDM	 -130 -520	mA

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR−5 Board (Note 1) @ TA = 25ºC Derate above 25ºC	PD	225 1.8	mW mW/ºC
Thermal Resistance, Junction–to–Ambient(Note 1)	RΘJA	556	ºC/W
Junction and Storage temperature	TJ,Tstg	−55~+150	° C
Maximum Lead Temperature for Soldering Purposes, for 10 seconds	TL	260	ºC

1. FR–5 = 1.0×0.75×0.062 in.

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain–Source Breakdown Voltage (VGS = 0, ID = -250μAdc)	VBRDSS	-50	-	-	Vdc
Zero Gate Voltage Drain Current (VGS = 0, VDS = -25 Vdc) (VGS = 0, VDS = -50 Vdc)	IDSS	- -	- -	-0.1 -15	μAdc
Gate–Body Leakage Current, Forward (VGS = 20 Vdc)	IGSSF	-	-	10	μAdc
Gate–Body Leakage Current, Reverse (VGS = - 20 Vdc)	IGSSR	-	-	-10	μAdc

ON CHARACTERISTICS (Note 2)

Gate Threshold Voltage (VDS = VGS, ID = -250μAdc)	VGS(th)	-0.9	-	-2	Vdc
Static Drain–Source On–State Resistance (VGS = -5.0 Vdc, ID = -100 mAdc)	RDS(on)	-	5	10	Ohm
Transfer Admittance (VDS = -25 Vdc, ID = -100 mAdc, f = 1.0 kHz)	|yfs|	50	-	-	mS

DYNAMIC CHARACTERISTICS

Input Capacitance (VDS = - 5.0 Vdc)	Ciss	-	30	-	pF
Output Capacitance (VDS = -5.0 Vdc)	Coss	-	10	-	pF
Reverse Transfer Capacitance (VDS = -5.0 Vdc)	Ciss	-	5	-	pF

SWITCHING CHARACTERISTICS

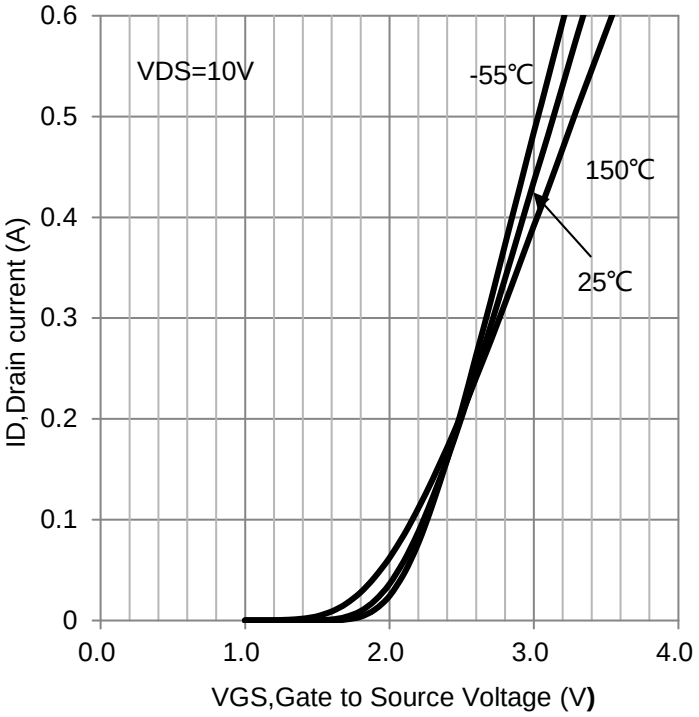
Turn-On Delay Time	(VDD = –15 Vdc, ID = –2.5 Adc,RL = 50 Ohm)	td(on)	-	2.5	-	ns
Rise Time		tr	-	1	-	
Turn-Off Delay Time		td(off)	-	16	-	
Fall Time		tf	-	8	-	

SOURCE–DRAIN DIODE CHARACTERISTICS

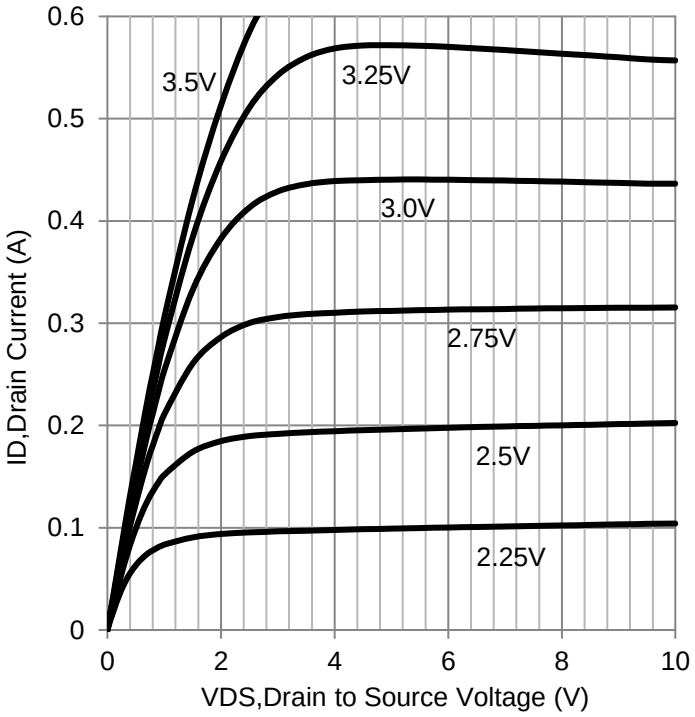
Continuous Current	IS	-	-	-0.13	A
Pulsed Current	ISM	-	-	-0.52	A
Forward Voltage	VSD	-	-2.2	-	V

2.Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.

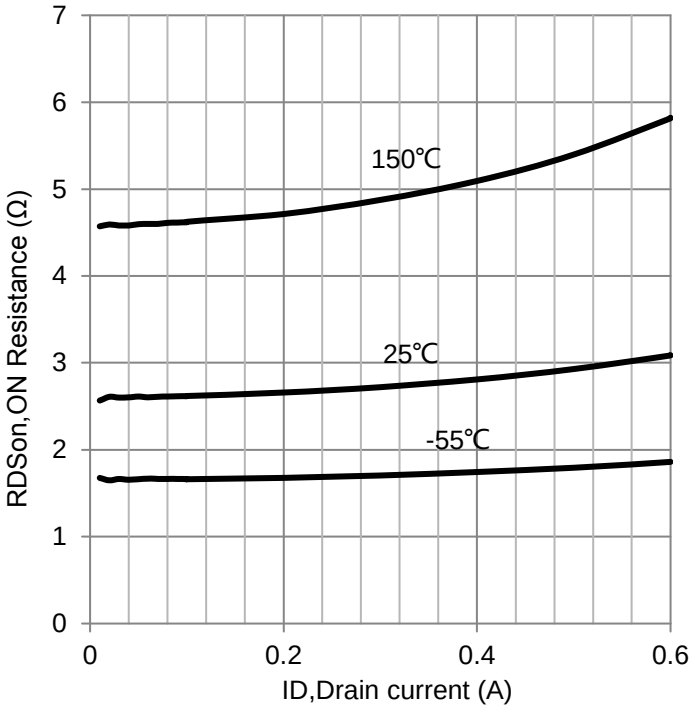
7. ELECTRICAL CHARACTERISTICS CURVES



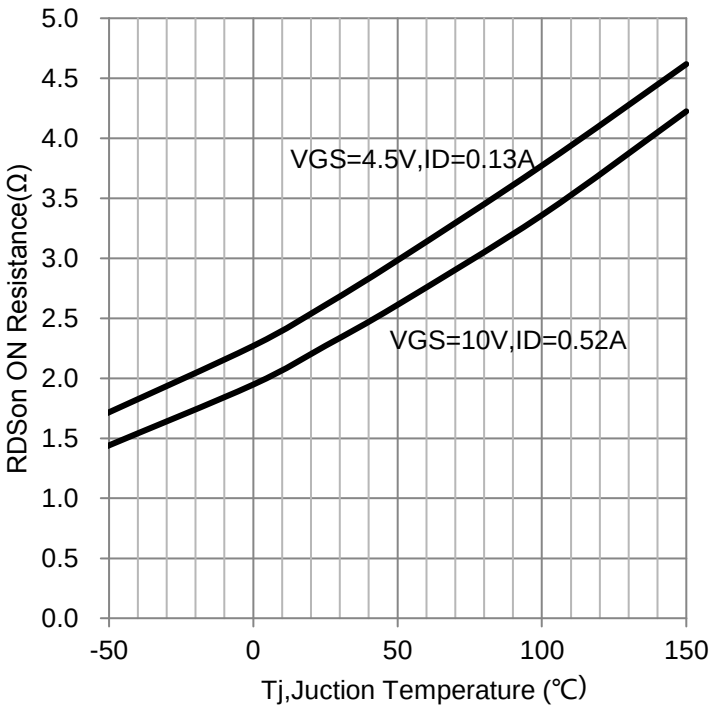
ID vs. VGS



ID vs. VDS

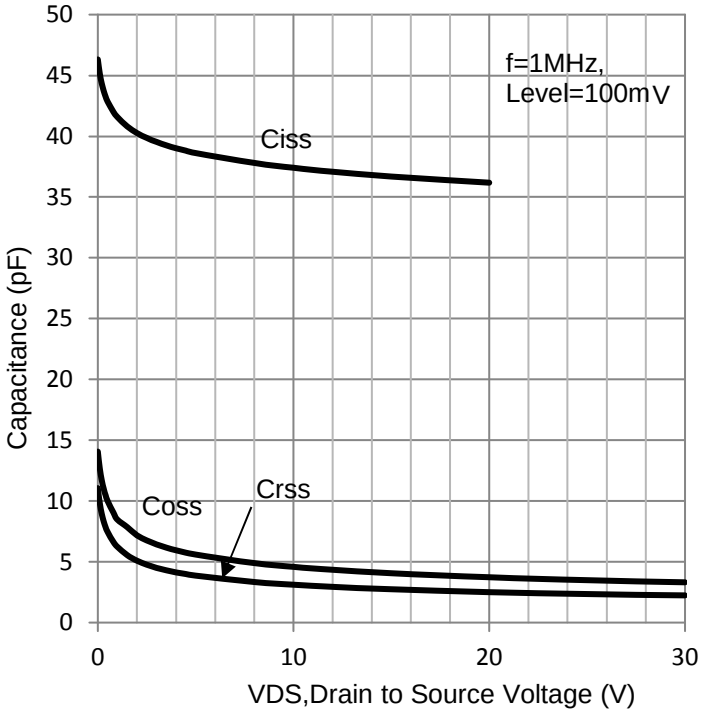


RDSon vs. ID

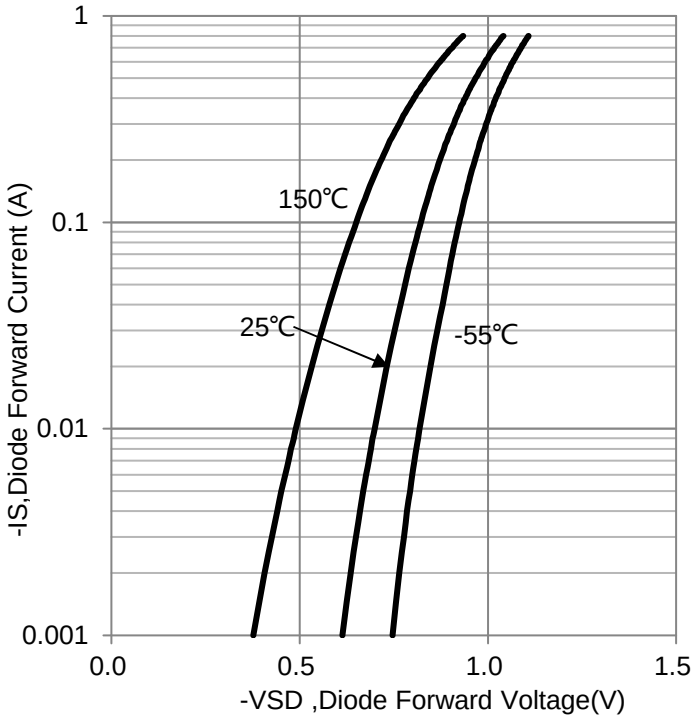


RDSon vs. Tj

7.ELECTRICAL CHARACTERISTICS CURVES(Con.)

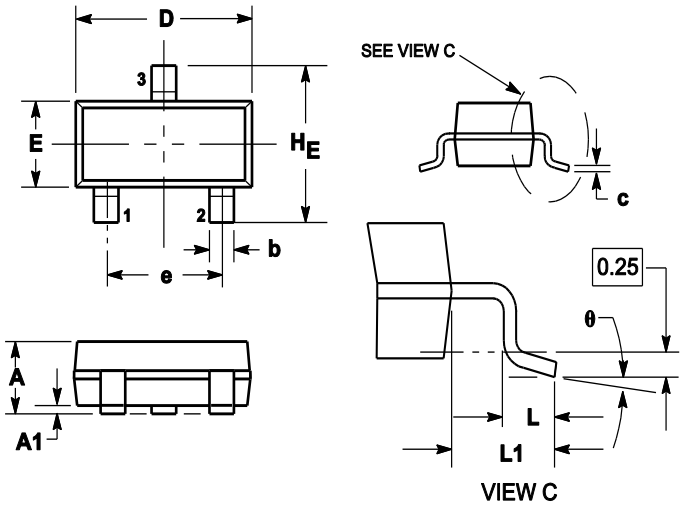


Capacitance



IS vs. VSD

8.OUTLINE AND DIMENSIONS



Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1	1.11	0.035	0.04	0.044
A1	0.01	0.06	0.1	0.001	0.002	0.004
b	0.37	0.44	0.5	0.015	0.018	0.02
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.9	3.04	0.11	0.114	0.12
E	1.20	1.3	1.4	0.047	0.051	0.055
e	1.78	1.9	2.04	0.07	0.075	0.081
L	0.10	0.2	0.3	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
H_E	2.10	2.4	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°

9.SOLDERING FOOTPRINT