

LBSS84ELT1G

S-LBSS84ELT1G

Power MOSFET 60V P-Channel

1. FEATURES

- Advanced trench cell design.
- High speed switch.
- G-S ESD Protected: $\pm 1000V$
- 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

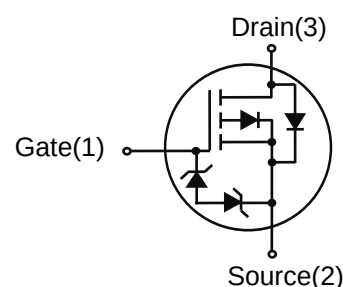
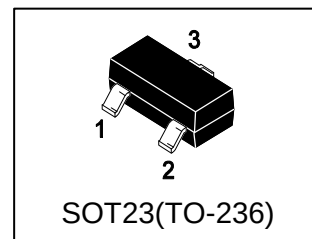
4. MAXIMUM RATINGS($T_a = 25^\circ C$)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	VDSS	-60	V
Gate-to-Source Voltage	VGSS	± 20	V
Drain Current			mA
– Continuous $T_A = 25^\circ C$	ID	-130	
– Pulsed ($t_p \leq 10\mu s$)	IDM	-520	

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR-5 Board (Note 1) @ $T_A = 25^\circ C$	PD	225	mW
Derate above $25^\circ C$		1.8	mW/ $^\circ C$
Thermal Resistance, Junction-to-Ambient(Note 1)	R θ JA	556	$^\circ C/W$
Junction and Storage temperature	TJ, Tstg	-55~+150	$^\circ C$
Maximum Lead Temperature for Soldering Purposes, for 10 seconds	TL	260	$^\circ C$

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 = -250μA)	VBRDSS	-60	-	-	V
Zero Gate Voltage Drain Current (VGS = 0, VDS = -25 V) (VGS = 0, VDS = -60 V)	IDSS	-	-	-0.1 -15	μA
Gate-Body Leakage Current, Forward (VGS = 20 V)	IGSSF	-	-	10	μA
Gate-Body Leakage Current, Reverse (VGS = - 20 V)	IGSSR	-	-	-10	μA

ON CHARACTERISTICS (Note 2)

Gate Threshold Voltage (VDS = VGS, ID = -250μA)	VGS(th)	-0.9	-	-2	V
Static Drain-Source On-State Resistance (VGS = -5.0 V, ID = -100 mA) (VGS = -10 V, ID = -100 mA)	RDS(on)	-	2 1.8	6 5	Ω
Transfer Admittance (VDS = -25 V, ID = -100 mA, f = 1.0 kHz)	yfs	50	-	-	mS

DYNAMIC CHARACTERISTICS

Input Capacitance (VDS = - 25 V,VGS=0V,f=1MHz)	Ciss	-	28.6	-	pF
Output Capacitance (VDS = - 25 V,VGS=0V,f=1MHz)	Coss	-	4	-	pF
Reverse Transfer Capacitance (VDS = - 25 V,VGS=0V,f=1MHz)	Crss	-	2.45	-	pF
Total Gate Charge	(VDS = -25V, VGS = -4.5V, ID = -0.1A)	Qg	-	1.1	nC
Gate-Source Charge		Qgs	-	0.3	
Gate-Drain Charge		Qgd	-	0.2	

SWITCHING CHARACTERISTICS

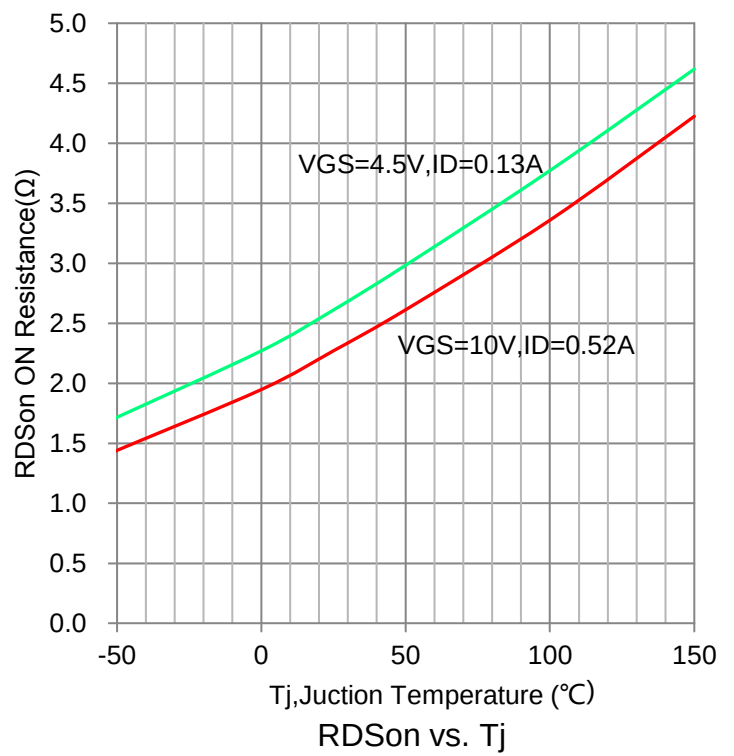
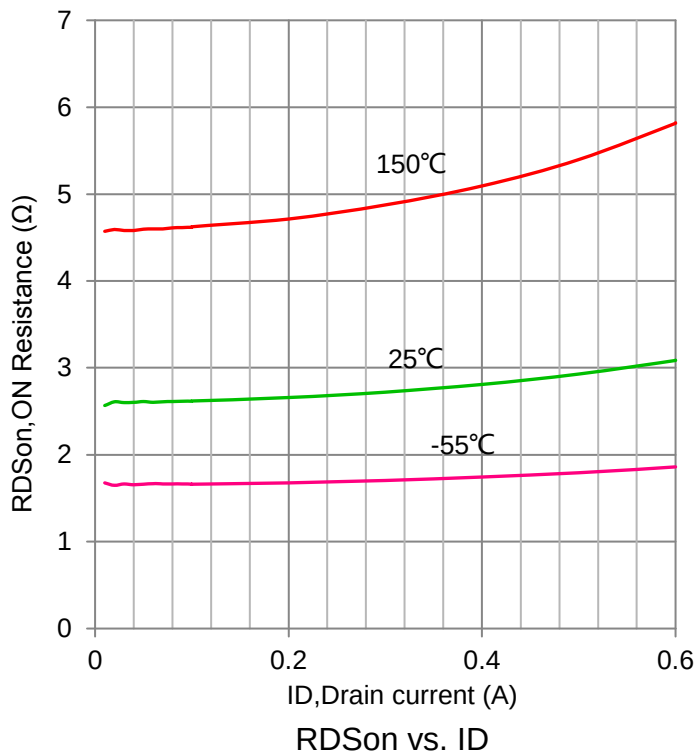
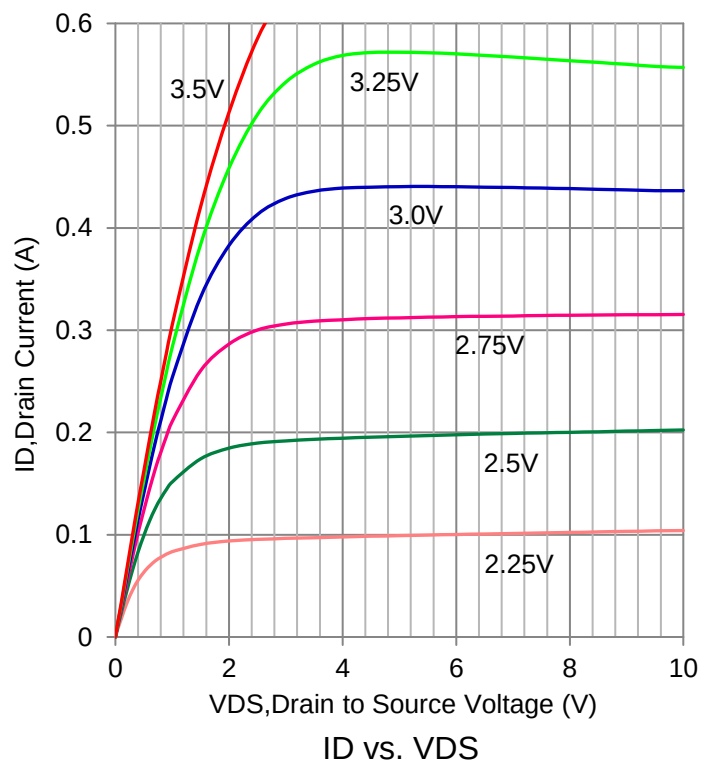
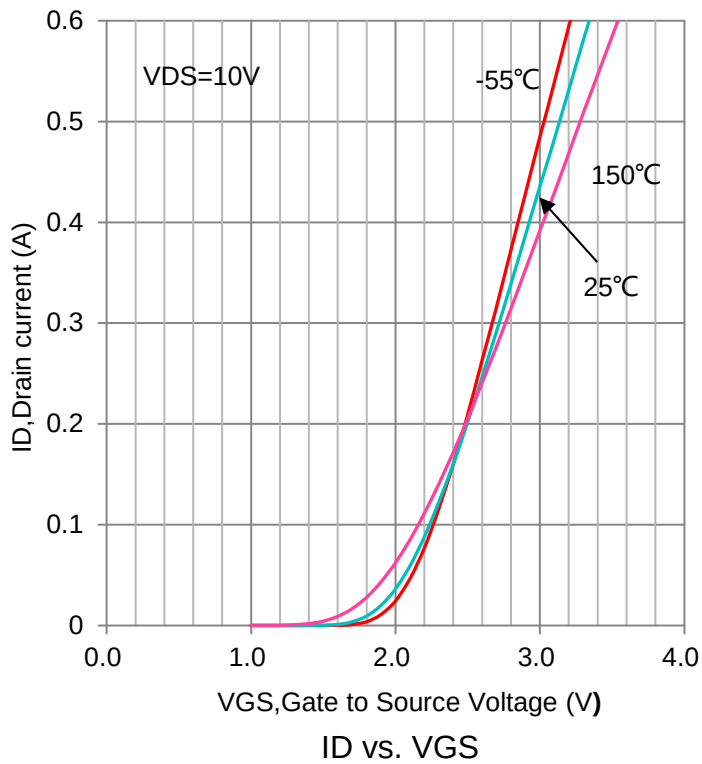
Turn-On Delay Time	(VDS = -25 V,VGEN = -10V,IDS = -0.1 A,RL = 250Ω,RG=6Ω)	td(on)	-	4.8	ns
Rise Time		tr	-	19	
Turn-Off Delay Time		td(off)	-	52	
Fall Time		tf	-	32	

SOURCE-DRAIN DIODE CHARACTERISTICS

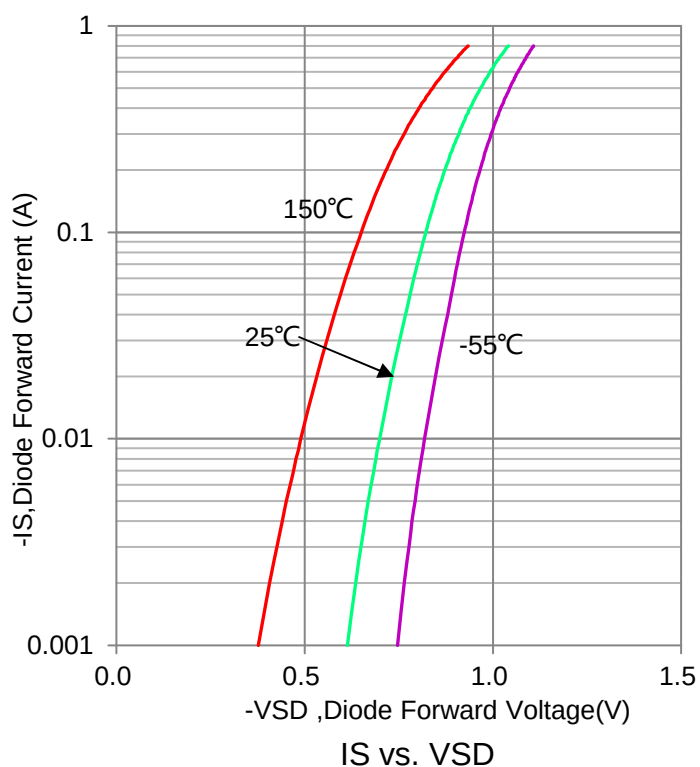
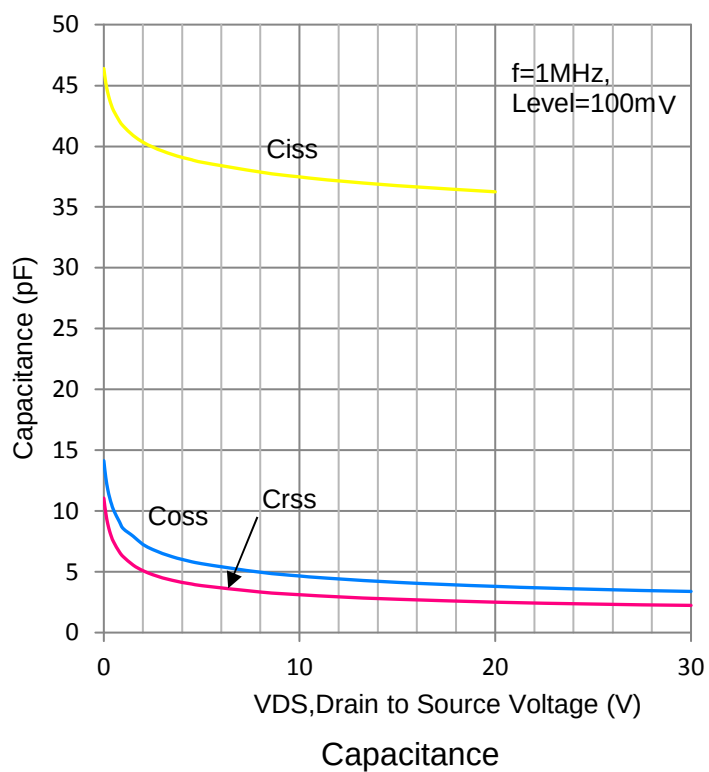
Continuous Current	IS	-	-	-0.13	A
Pulsed Current	ISM	-	-	-0.52	A
Forward Voltage	VSD	-	-2.2	-	V

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

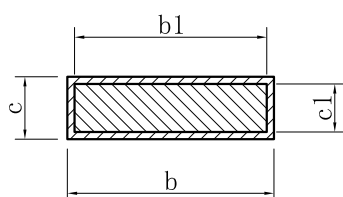
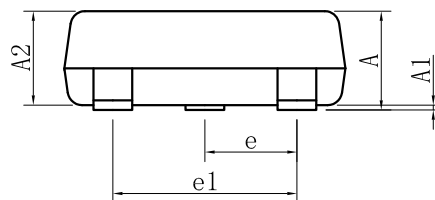
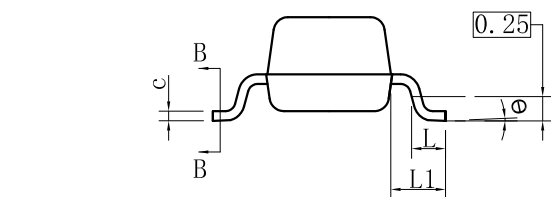
7. ELECTRICAL CHARACTERISTICS CURVES



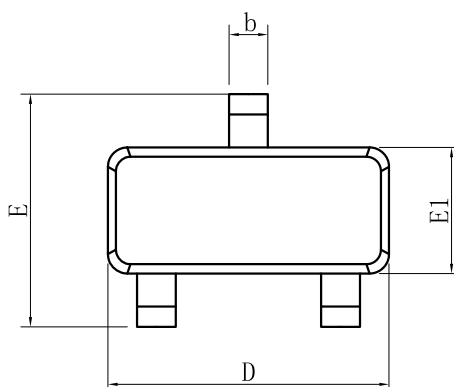
7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



8.OUTLINE AND DIMENSIONS



SECTION B-B

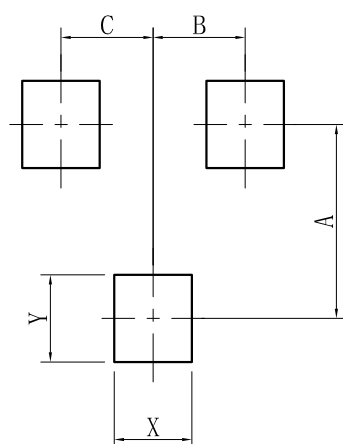


SOT23			
DIM	MIN	NOR	MAX
A	0.89	–	1.12
A1	0.01	–	0.10
A2	0.88	0.95	1.02
b	0.30	–	0.50
b1	0.30	0.40	0.45
c	0.08	–	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	–	2.64
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.90BSC		
L	0.40	0.46	0.60
L1	0.54REF		
θ	0°	–	8°
All Dimensions in mm			

GENERAL NOTES

- 1.Top package surface finish $Ra0.4 \pm 0.2\mu m$
- 2.Bottom package surface finish $Ra0.7 \pm 0.2\mu m$
- 3.Side package surface finish $Ra0.4 \pm 0.2\mu m$

9.SOLDERING FOOTPRINT



SOT-23	
DIM	(mm)
X	0.80
Y	0.90
A	2.00
B	0.95
C	0.95

DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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