

BSS84ED

Power MOSFET 50 Volts P-Channel

1. FEATURES

- Advanced trench cell design.
- High speed switch.
- ESD Protected: $\pm 1000V$
- 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
BSS84ED	PE	3000/Tape&Reel

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

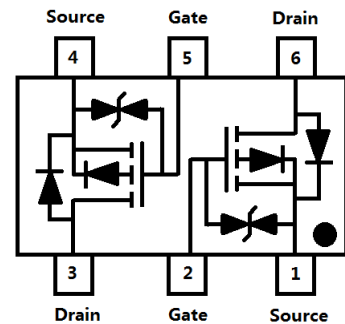
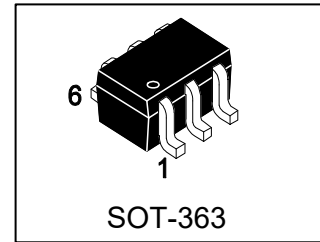
Parameter	Symbol	Limits	Unit
Drain-Source Voltage	VDSS	-50	V
Gate-to-Source Voltage	VGSS	± 20	V
Drain Current			mA
- Continuous $T_A = 25^\circ C$	ID	-130	
- Pulsed ($t_p \leq 10\mu s$)	IDM	-520	

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, Per Device	PD	380 250	mW
FR-5 Board (Note 2) @ $T_A = 25^\circ C$ Derate above $25^\circ C$		3.0	mW/ $^\circ C$
Thermal Resistance, Junction-to-Ambient(Note 2)	ROJA	328	$^\circ C/W$
Junction and Storage temperature	TJ, Tstg	-55~+150	$^\circ C$

1. Pulse Test: Pulse Width $\leq 300 \mu s$, Duty Cycle $\leq 2.0\%$.

2. FR-5 = 1.0x0.75x0.062 in.



6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain–Source Breakdown Voltage (VGS = 0, ID = -250μA)	VBRDSS	-50	-	-	V
Zero Gate Voltage Drain Current (VGS = 0, VDS = -25 V) (VGS = 0, VDS = -50 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 2	6 5	Ohm
Transfer Admittance (VDS = -25 V, ID = -100 mA, f = 1.0 kHz)	yfs	50	-	-	mS

DYNAMIC CHARACTERISTICS

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

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	-	

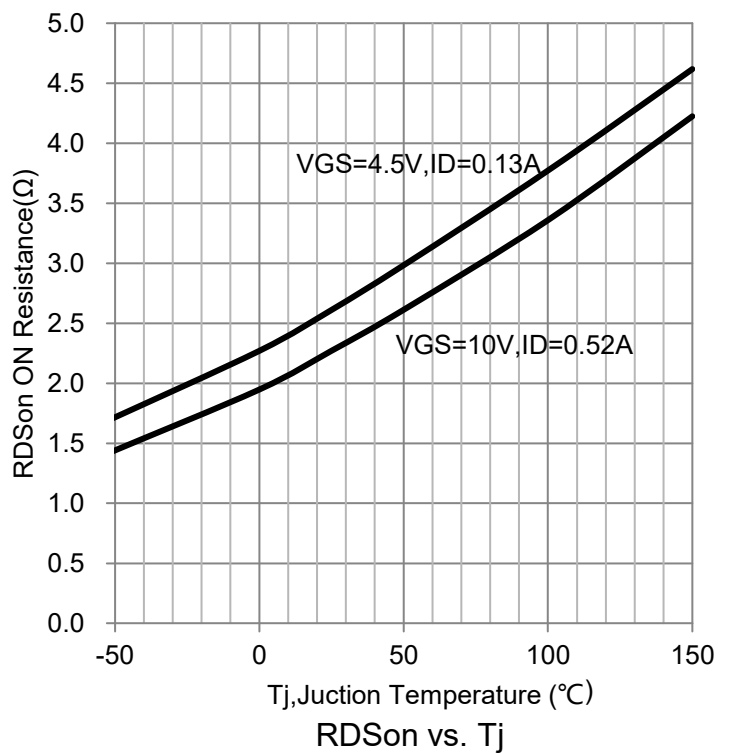
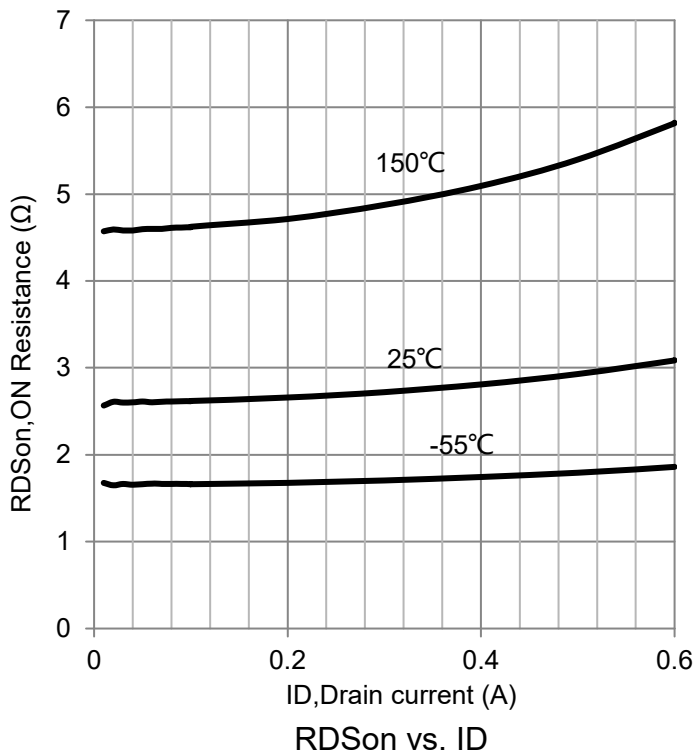
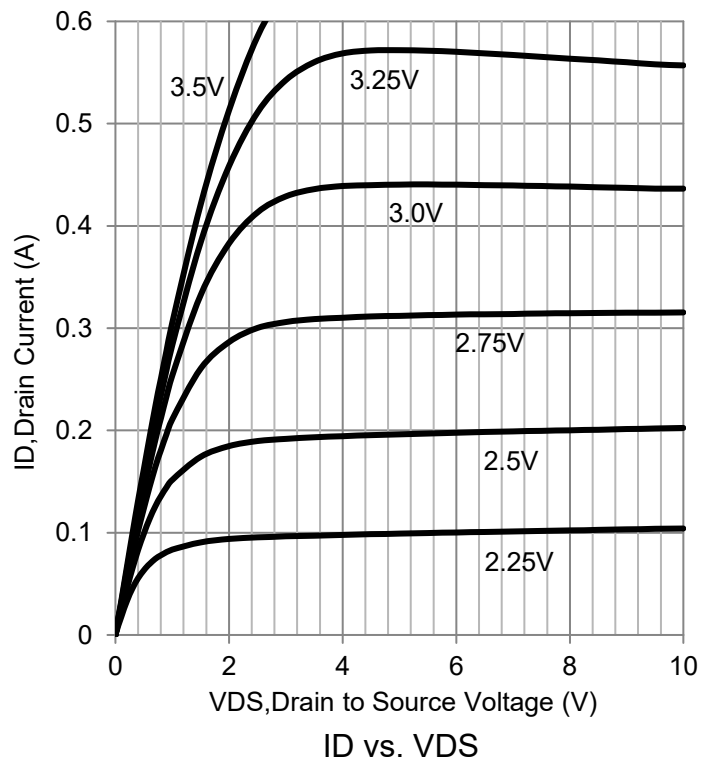
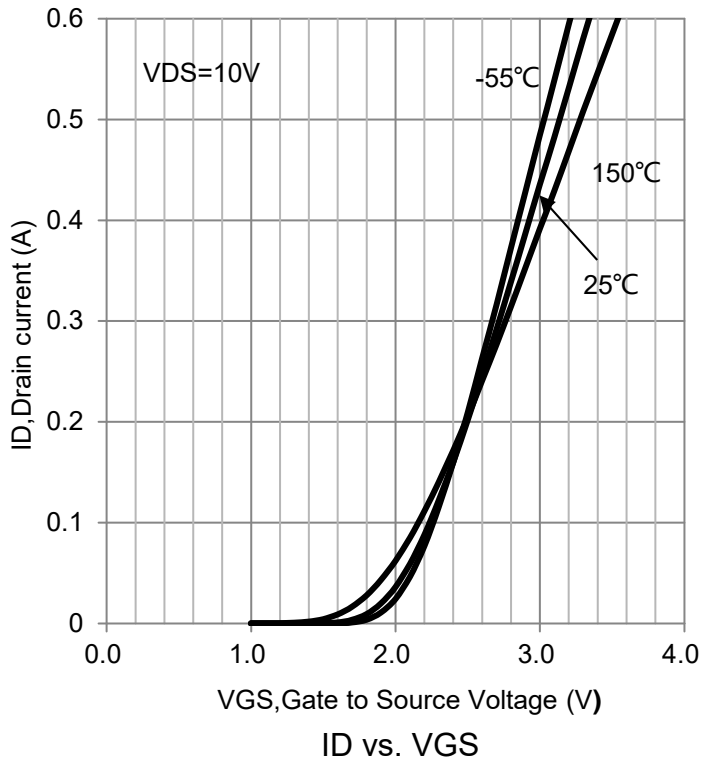
SOURCE–DRAIN DIODE CHARACTERISTICS

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

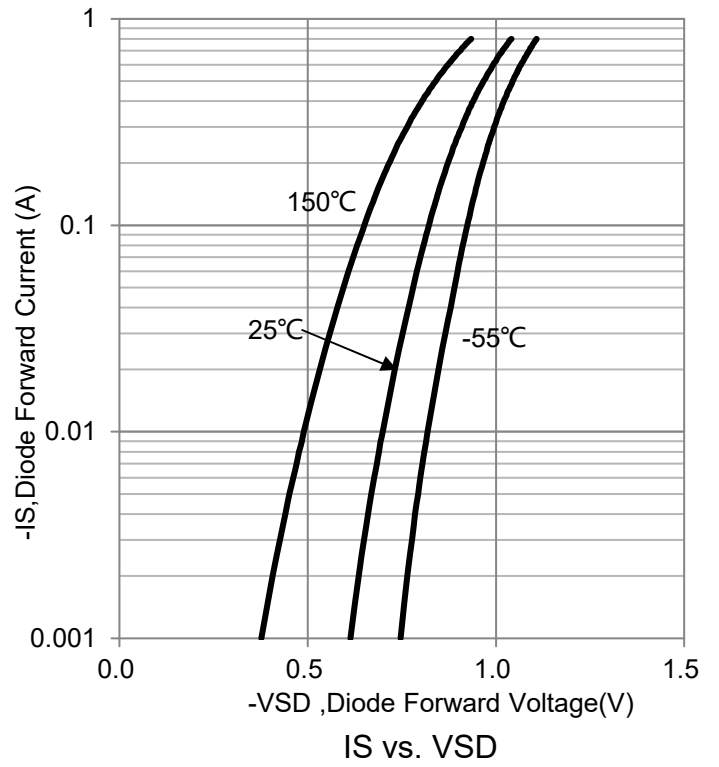
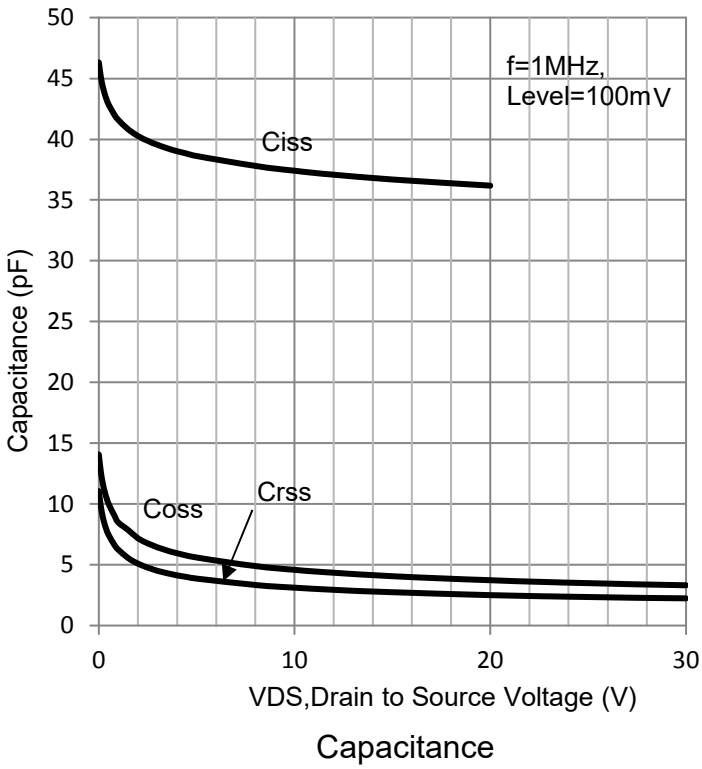
2.Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.



7. ELECTRICAL CHARACTERISTICS CURVES



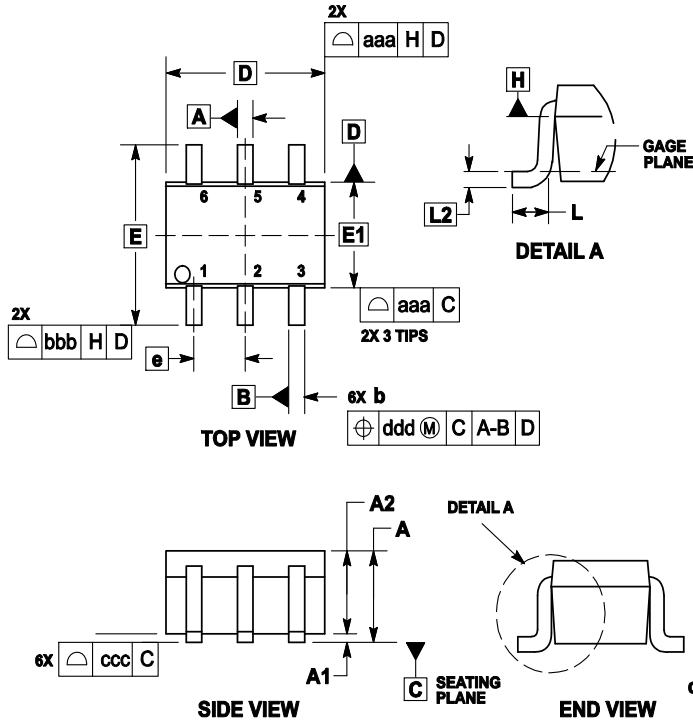
7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



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.



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	---	---	1.10	---	---	0.043
A1	0.00	---	0.10	0	---	0.004
A2	0.70	0.90	1.00	0.027	0.035	0.039
b	0.15	0.20	0.25	0.006	0.008	0.01
C	0.08	0.15	0.22	0.003	0.006	0.009
D	1.80	2.00	2.20	0.07	0.078	0.086
E	2.00	2.10	2.20	0.078	0.082	0.086
E1	1.15	1.25	1.35	0.045	0.049	0.053
e	0.65 BSC			0.026 BSC		
L	0.26	0.36	0.46	0.010	0.014	0.018
L2	0.15 BSC			0.006 BSC		
aaa	0.15			0.01		
bbb	0.30			0.01		
ccc	0.10			0.00		
ddd	0.10			0.00		

9. SOLDERING FOOTPRINT

