

# BSS84W

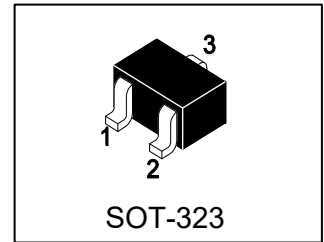
## S-BSS84W

Power MOSFET

130 mA, 50V P-Channel SOT-323

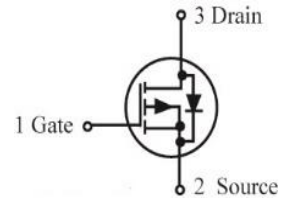
### 1. FEATURES

- 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.
- Energy efficient



### 2. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
BSS84W	PD	3000/Tape&Reel



### 3. MAXIMUM RATINGS(Ta = 25°C)

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

### 4. THERMAL CHARACTERISTICS

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

1. FR-5 = 1.0×0.75×0.062 in.



## 5. 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) (VGS = 0, VDS = -50 V, TJ=125°C)	IDSS	-	-	-0.1 -15 -60	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)	-0.8	-	-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 = - 15V, VGS=0V, f=1MHz)	Ciss	-	38	-	pF
Output Capacitance (VDS = - 15V, VGS=0V, f=1MHz)	Coss	-	4.8	-	pF
Reverse Transfer Capacitance (VDS = - 15V, VGS=0V, f=1MHz)	Crss	-	2.7	-	pF

### SWITCHING CHARACTERISTICS

Turn-On Delay Time	(VDS = -15 V, VGS=-10V , RL = 50Ω, RG=25Ω)	td(on)	-	16.7	-	ns
Rise Time		tr	-	8.6	-	
Turn-Off Delay Time		td(off)	-	17.9	-	
Fall Time		tf	-	5.3	-	

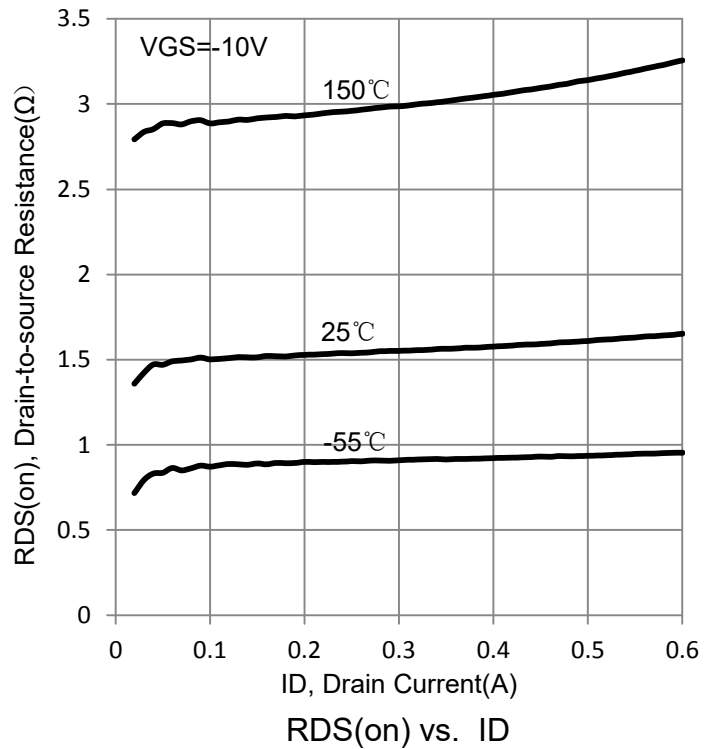
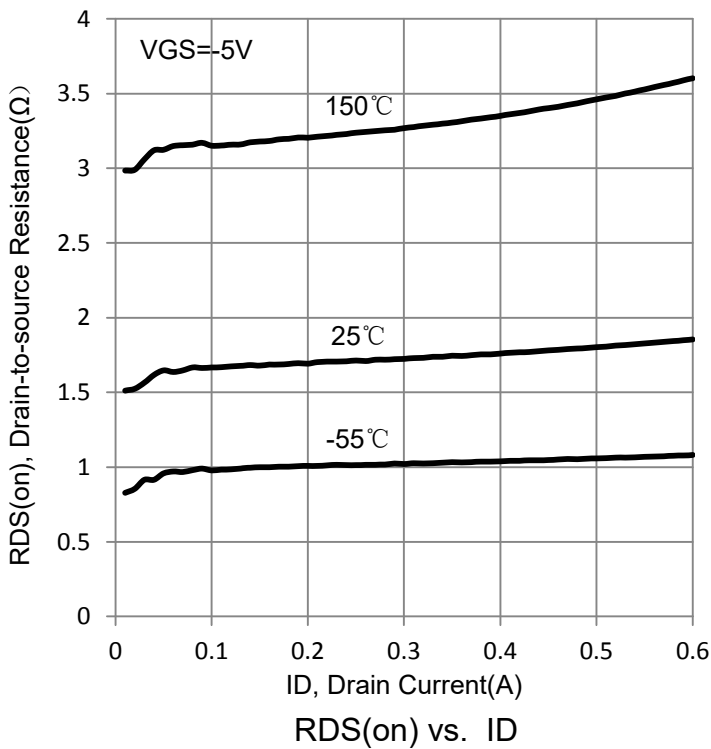
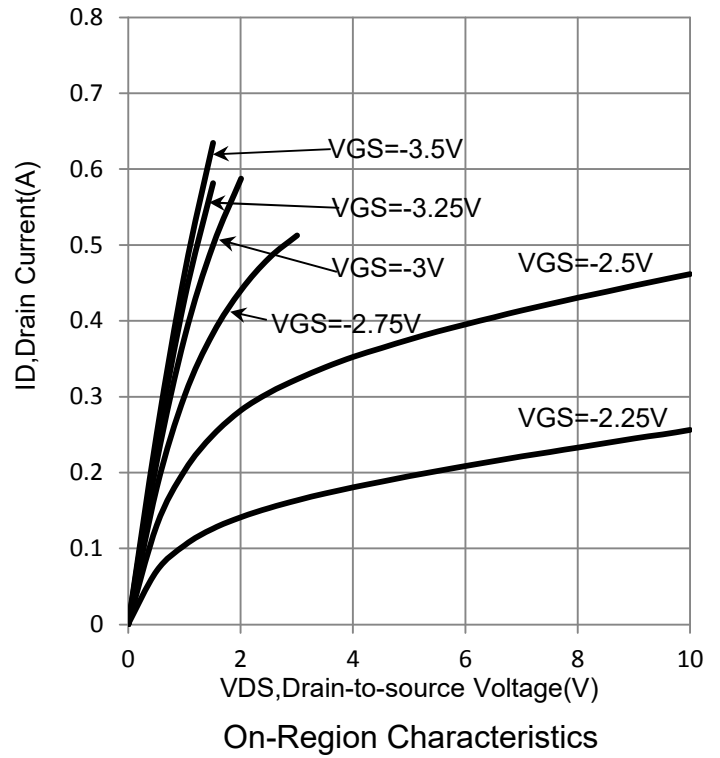
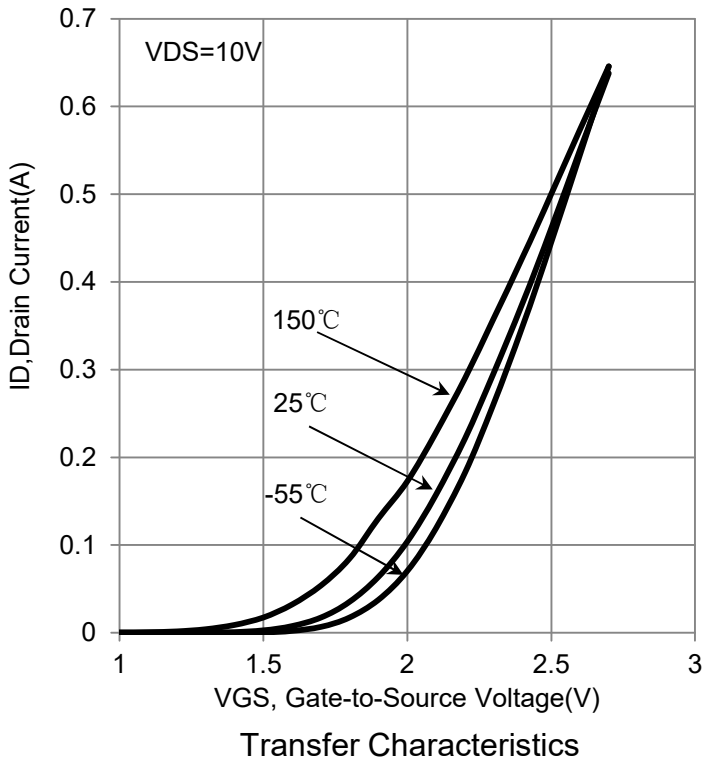
### SOURCE–DRAIN DIODE CHARACTERISTICS

Continuous Current	IS	-	-	-0.13	A
Pulsed Current	ISM	-	-	-0.52	A
Forward Voltage	VSD	-	-2.5	-	V

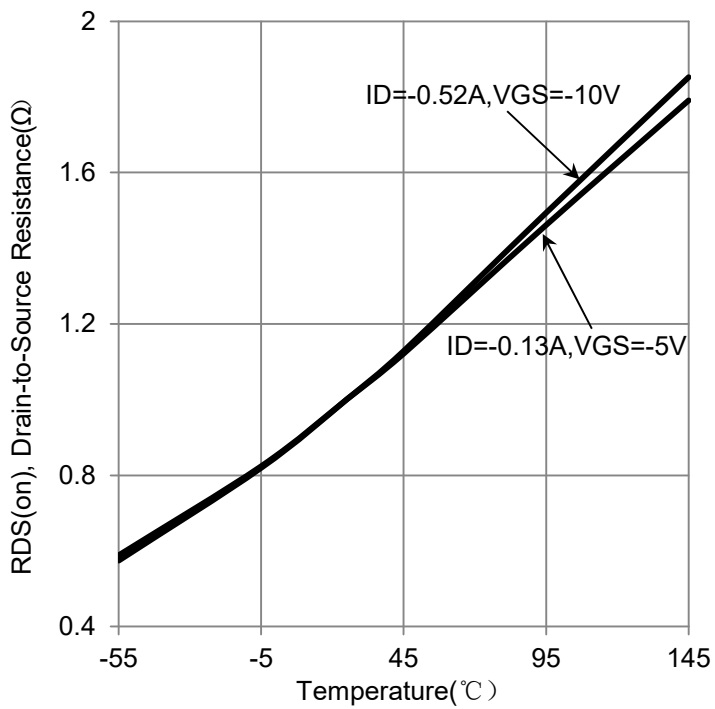
2. Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .



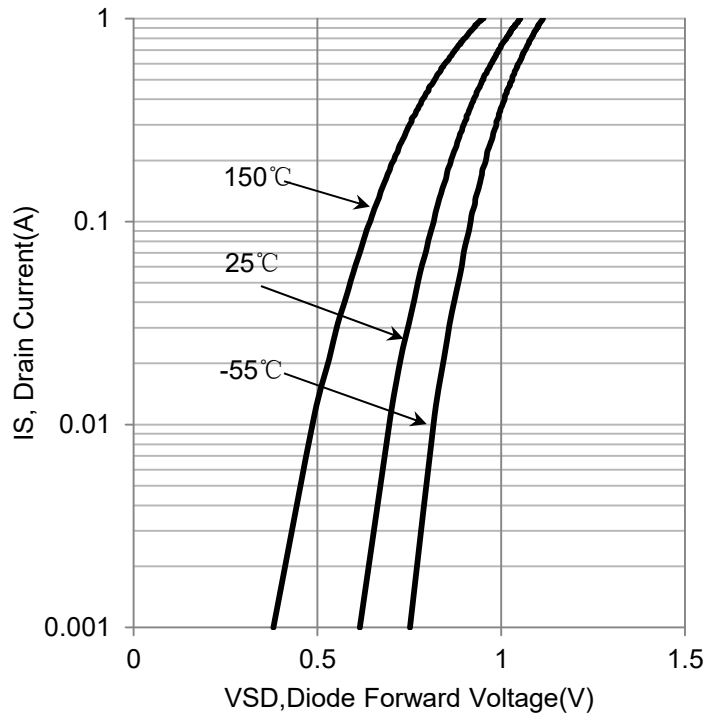
## 6. ELECTRICAL CHARACTERISTICS CURVES



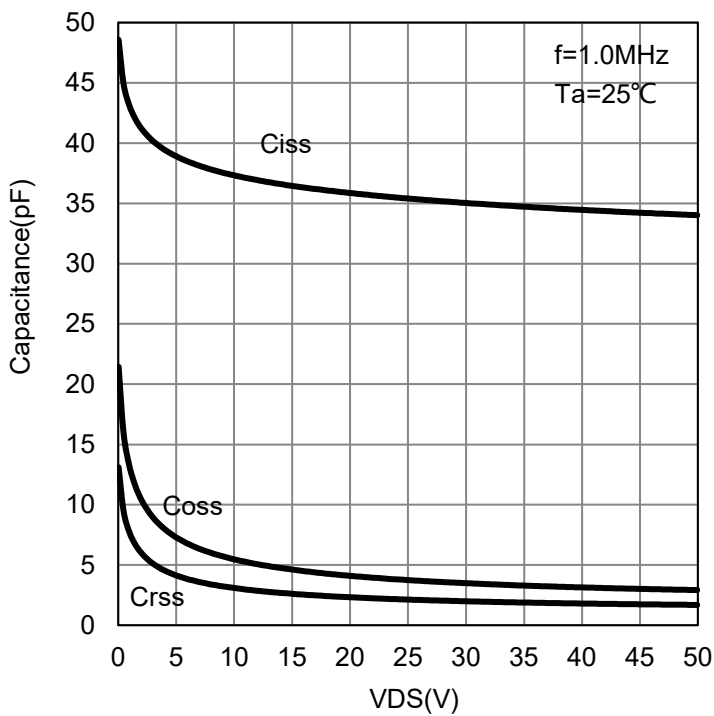
## 6. ELECTRICAL CHARACTERISTICS CURVES(Con.)



RDS(on) vs. Temperature



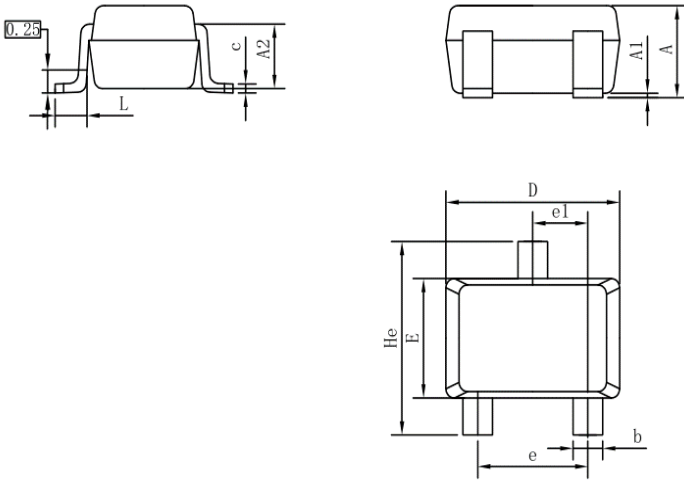
IS vs. VSD



Capacitor vs. VDS

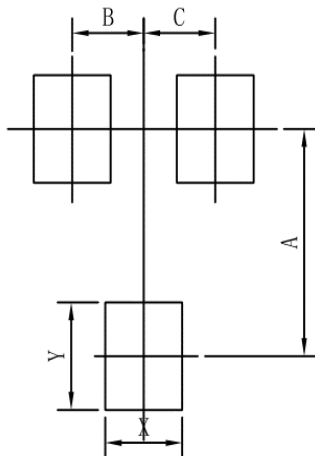


## 7. OUTLINE AND DIMENSIONS



SOT-323			
DIM	MIN	NOR	MAX
A	0.80	0.95	1.00
A1	0.00	0.05	0.10
A2	0.7 REF		
b	0.30	0.35	0.40
c	0.10	0.15	0.25
D	1.80	2.05	2.20
E	1.15	1.30	1.35
e	1.20	1.30	1.40
e1	0.65 BSC		
L	0.20	0.35	0.56
He	2.00	2.10	2.40
ALL Dimension in mm			

## 8. SOLDERING FOOTPRINT



SOT-323	
DIM	MIN
A	1.90
B	0.65
C	0.65
X	0.70
Y	0.90

