

DATA SHEET

BSS84

P-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

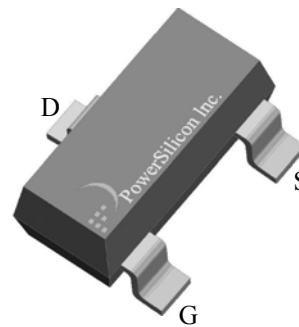
VOLTAGE -60 V **CURRENT** -130mA

FEATURES

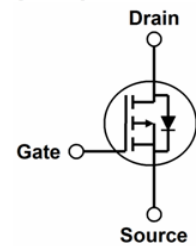
- DESIGNED FOR HIGH SPEED PULSE AMPLIFIER AND DRIVE APPLICATION.
- HIGH DENSITY CELL DESIGN FOR LOW $R_{DS(ON)}$
- VOLTAGE CONTROLLED SMALL SIGNAL SWITCHING.
- HIGH SATURATION CURRENT CAPABILITY.
- LEAD FREE AND HALOGEN-FREE.

MECHANICAL DATA

- CASE: SOT-23 PLASTIC CASE
- TERMINALS: SOLDERABLE PER MIL-STD-202, METHOD208



SYMBOL



CASE: SOT-23

ABSOLUTE MAXIMUM RATINGS

RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED.

PARAMETER	SYMBOL	VALUE	UNITS
DRAIN-SOURCE VOLTAGE	V_{DSS}	-60	V
GATE-SOURCE VOLTAGE	V_{GSS}	±20	V
CONTINUOUS DRAIN CURRENT	I_D	-130	mA
PULSED DRAIN CURRENT	I_{DM}	-520	mA
MAXIMUM POWER DISSIPATION DERATING AT $T_A = 25^\circ\text{C}$	P_D	225	mW
THERMAL RESISTANCE, JUNCTION TO AMBIENT	$R_{\theta JA}$	556	°C/W
OPERATING JUNCTION TEMPERATURE	T_J	150	°C
STORAGE TEMPERATURE RANGE	T_{STG}	-55 TO +150	°C

NOTES:

1. $R_{\theta JA}$ IS THE SUM OF THE JUNCTION-TO-CASE AND CASE-TO-AMBIENT THERMAL RESISTANCE WHERE THE CASE THERMAL REFERENCE IS DEFINED AS THE SOLDER MOUNTING SURFACE OF THE DRAIN PINS.
THE VALUE OF $R_{\theta JA}$ IS MEASURED WITH DEVICE MOUNTED ON 1 IN2 FR-4 BOARD WITH 2 OZ COPPER.

ELECTRICAL CHARACTERISTICS

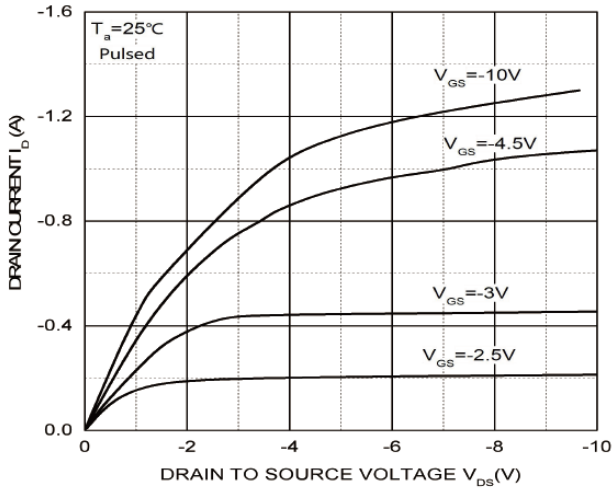
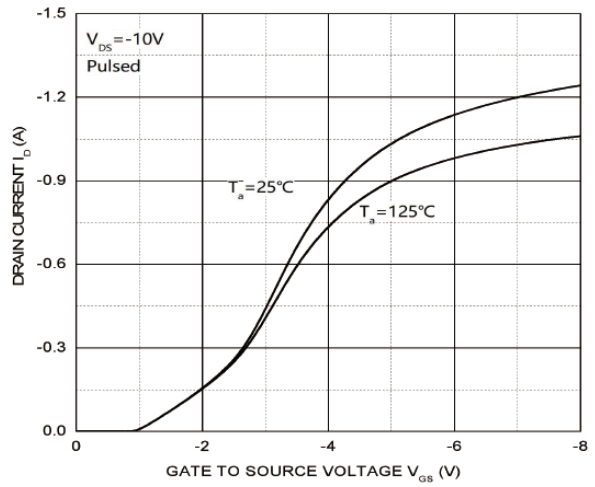
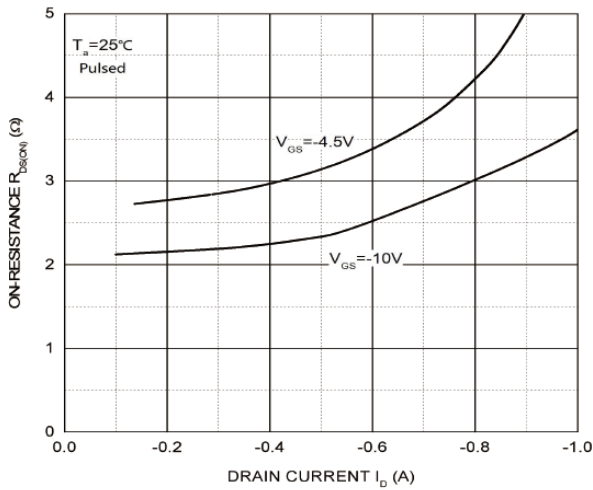
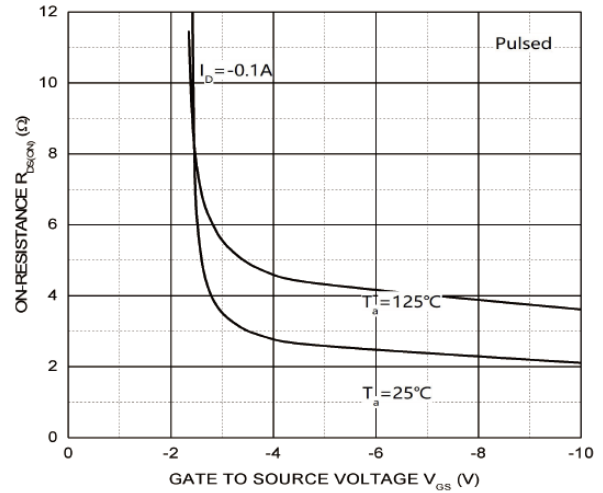
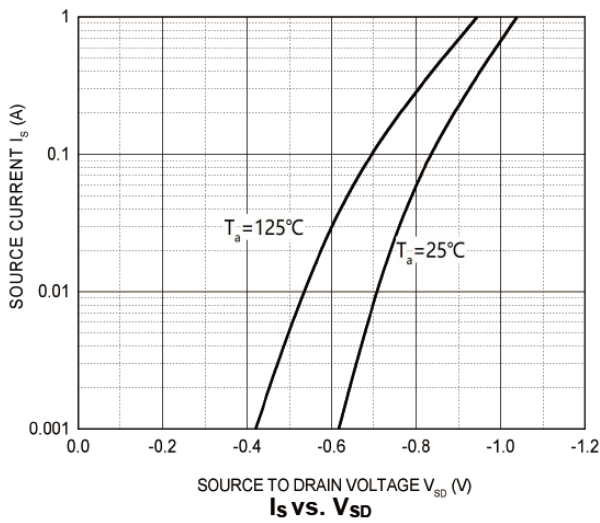
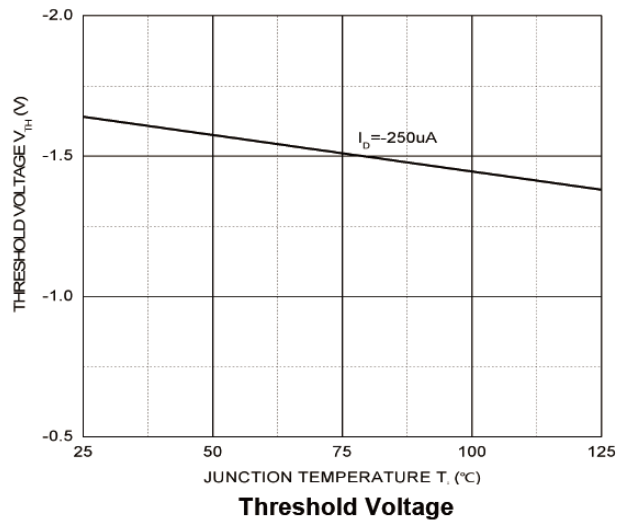
AT T _A =25°C UNLESS OTHERWISE NOTED						
PARAMETER	TEST CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNITS
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	I _D =-250μA, V _{GS} =0V	V _{(BR)DSS}	-60	-	-	V
Drain-Source Leakage Current	V _{DS} =-48V, V _{GS} =0V, T _J =25°C	I _{DSS}	-	-	-1.0	μA
Gate-Source Leakage Current	V _{GS} =20V, V _{DS} =0	I _{GSS}	-	-	±0.1	
ON CHARACTERISTICS (NOTE.1)						
Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	V _{GS(th)}	-0.8	-1.5	-2.5	V
Drain-Source On-Resistance	V _{GS} =-10V, I _D =-500mA	R _{DS(ON)}	-	2.2	3.6	Ω
Drain-Source On-Resistance	V _{GS} =-4.5V, I _D =-200mA	R _{DS(ON)}	-	2.6	5.4	Ω
DYNAMIC CHARACTERISTICS						
Input Capacitance	V _{DS} =-5V, V _{GS} =0V, f=1.0MHz	C _{ISS}	-	30	-	pF
Output Capacitance		C _{OSS}	-	10	-	pF
Reverse Transfer Capacitance		C _{RSS}	-	5	-	pF
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	V _{DD} =-15V, R _L =50Ω, I _D =-2.5A	td(on)	-	2.5	-	nS
Turn-On Rise Time		tr	-	1	-	nS
Turn-Off Delay Time		td(off)	-	16	-	nS
Turn-Off Fall Time		rf	-	8	-	nS
SOURCE-DRAIN DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Source-Drain Diode Forward Voltage	V _{GS} =0V, I _S =-130mA	V _{SD}	-		-1.3	V

NOTE:

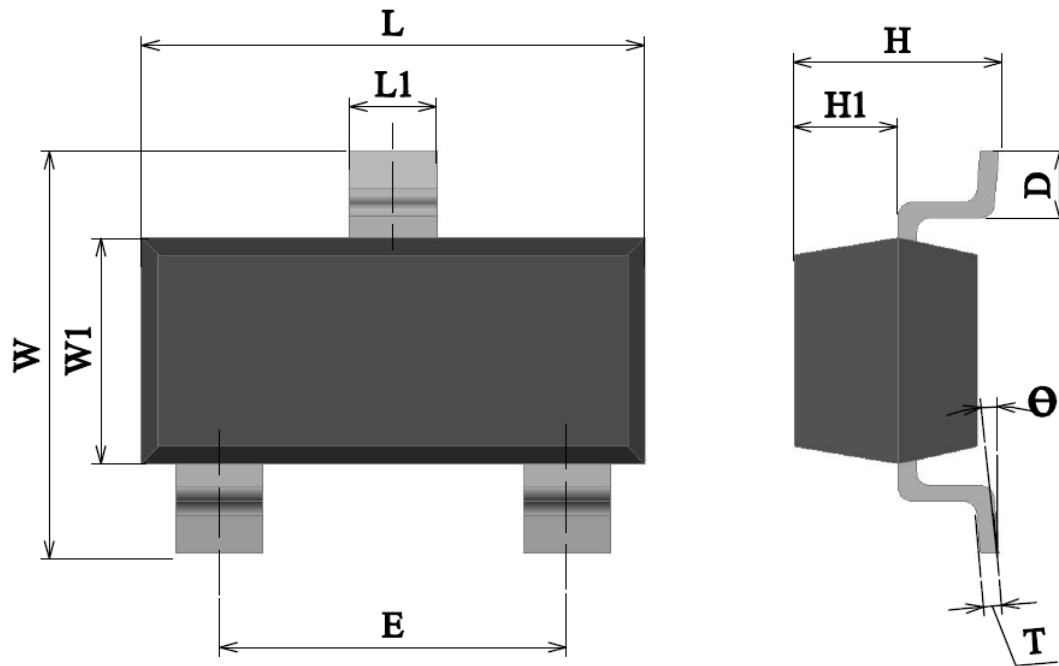
1. PULSE TEST: PLUSE WIDTH <300μS, DUTY CYCLE <2.0%.

ORDERING INFORMATION

PART NUMBER	PACKAGE	SHIPPING
BSS84-T3R	SOT-23	TAPE REEL


Output Characteristics

Transfer Characteristics

 $R_{DS(ON)}$ vs. I_D

 $R_{DS(ON)}$ vs. V_{GS}

 I_S vs. V_{SD}

Threshold Voltage

SOT-23 DIMENSION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
L	2.80	3.10	0.110	0.122
L1	0.30	0.50	0.012	0.020
W	2.25	2.54	0.089	0.100
W1	1.20	1.40	0.047	0.055
E	1.80	2.00	0.071	0.079
H	0.90	1.15	0.035	0.045
H1	0.40	0.80	0.016	0.031
D	0.30	0.50	0.012	0.020
T	0.08	0.15	0.003	0.006
θ	0°	8°	0°	8°