

## DATA SHEET

### D882

#### NPN PLASTIC-ENCAPSULATE TRANSISTORS

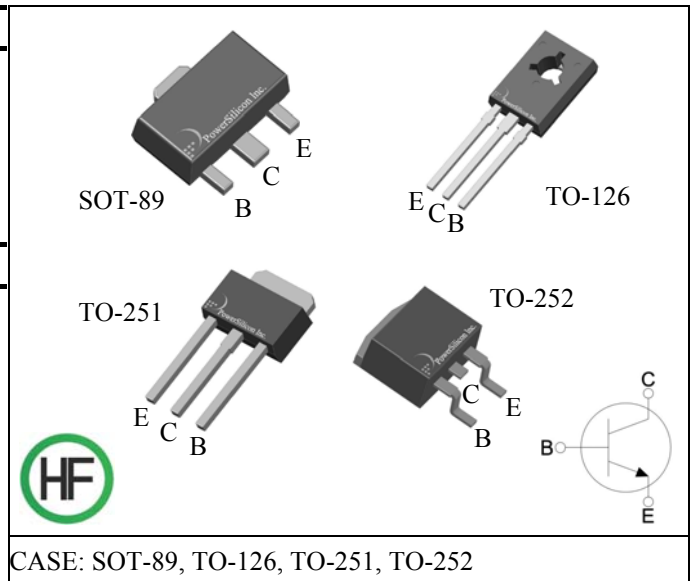
**VOLTAGE** 30 V **CURRENT** 3 A

#### FEATURES

- COMPLEMENTARY TO B772
- COLLECTOR CURRENT  $I_C = 3A$
- COLLECTOR-EMITTER VOLTAGE  $V_{CE} = 30V$
- LEAD FREE AND HALOGEN-FREE

#### MECHANICAL DATA

- CASE: SOT-89, TO-126, TO-251, TO-252
- TERMINALS: SOLDERABLE PER MIL-STD-202G, METHOD 208



#### MAXIMUM RATINGS

RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED.			
PARAMETER	SYMBOL	VALUE	UNITS
COLLECTOR-EMITTER VOLTAGE	$V_{CEO}$	30	V
COLLECTOR-BASE VOLTAGE	$V_{CBO}$	40	V
EMITTER-BASE VOLTAGE	$V_{EBO}$	6	V
COLLECTOR CURRENT-CONTINUOUS	$I_C$	3	A
COLLECTOR POWER DISSIPATION	TO-126, TO-251, TO-252	1.25	W
	SOT-89	500	mW
THERMAL RESISTANCE, JUNCTION TO AMBIENT	TO-126, TO-251, TO-252	100	°C/W
	SOT-89	250	°C/W
JUNCTION TEMPERATURE	$T_J$	150	°C
STORAGE TEMPERATURE RANGE	$T_{STG}$	-55 to +150	°C

#### ORDERING INFORMATION

PART NUMBER	PACKAGE	SHIPPING	MARKING CODE
D882-▲-TE3B	TO-126	BULK	D882 LS yww
D882-▲-TD3T	TO-251	TUBE	
D882-▲-TC2R	TO-252	TAPE REEL	
D882-▲-T89R	SOT-89	TAPE REEL	

**Note:**

1. ▲: Rank of  $h_{FE}$  (See Classification Of  $h_{FE}$ )
2. Marking Code: yww  
y: year, ww: weeks

## ELECTRICAL CHARACTERISTICS

### ELECTRICAL CHARACTERISTICS (AT $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

PARAMETER	TEST CONDITION	SYMBOL	MIN.	MAX.	UNITS
COLLECTOR-EMITTER BREAKDOWN VOLTAGE	$I_C = 10\text{mA}, I_B = 0$	$V_{(BR)CEO}$	30	-	V
COLLECTOR-BASE BREAKDOWN VOLTAGE	$I_C = 100\mu\text{A}, I_E = 0$	$V_{(BR)CBO}$	40	-	V
EMITTER-BASE BREAKDOWN VOLTAGE	$I_E = 100\mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	6	-	V
COLLECTOR CUT-OFF CURRENT	$V_{CB} = 40\text{V}, I_E = 0$	$I_{CBO}$	-	1	$\mu\text{A}$
COLLECTOR CUT-OFF CURRENT	$V_{CE} = 30\text{V}, I_B = 0$	$I_{CEO}$	-	10	$\mu\text{A}$
EMITTER CUT-OFF CURRENT	$V_{EB} = 6\text{V}, I_C = 0$	$I_{EBO}$	-	1	$\mu\text{A}$
DC CURRENT GAIN	$I_C = 1\text{A}, V_{CE} = 2\text{V}$	$h_{FE}$	60	400	-
COLLECTOR-EMITTER SATURATION VOLTAGE	$I_C = 2\text{A}, I_B = 0.2\text{A}$	$V_{CE(SAT)}$	-	0.5	V
BASE-EMITTER SATURATION VOLTAGE		$V_{BE(SAT)}$	-	1.5	V
TRANSITION FREQUENCY	$I_C = 0.1\text{A}, V_{CE} = 5\text{V}, f = 10\text{MHz}$	$f_T$	50	-	MHz

### CLASSIFICATION OF $h_{FE}$

RANK	R	O	Y	GR
RANGE	60-120	100-200	160-320	200-400

## TYPICAL PERFORMANCE CHARACTERISTICS

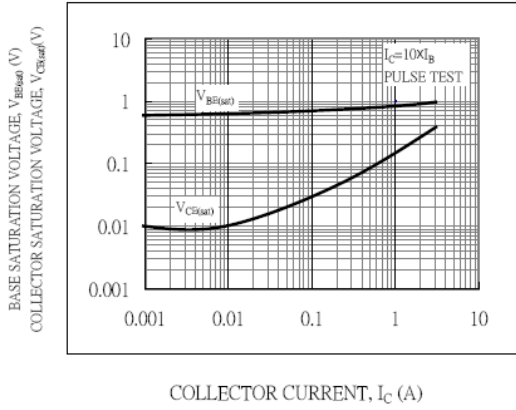


FIG.1 - BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT

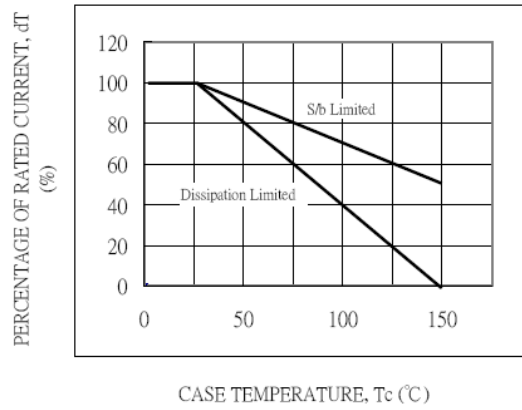


FIG.2 - DERATING CURVES FOR ALL TYPES

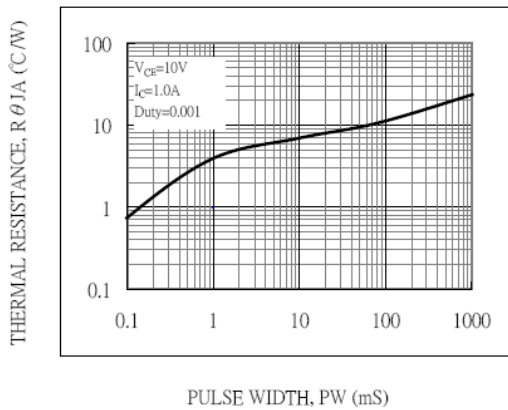


FIG.3 - THERMAL RESISTANCE vs. PULSE WIDTH

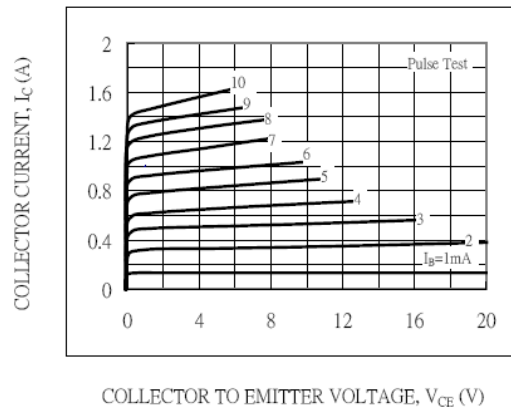


FIG.4 - COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE

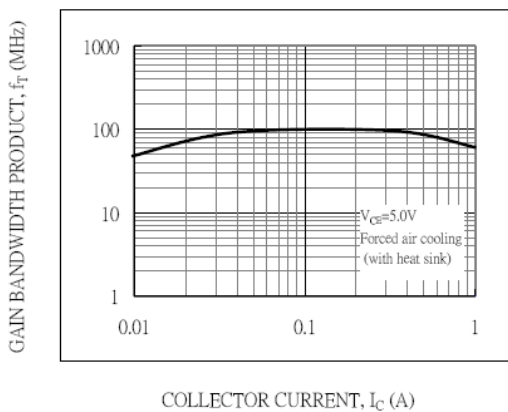


FIG.5 - GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT

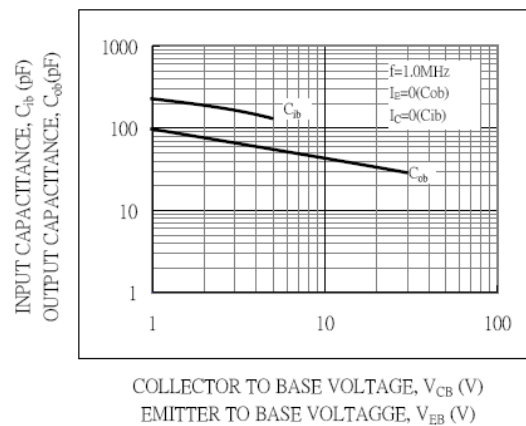


FIG.6 - INPUT AND OUTPUT CAPACITANCE vs. REVERSE VOLTAGE

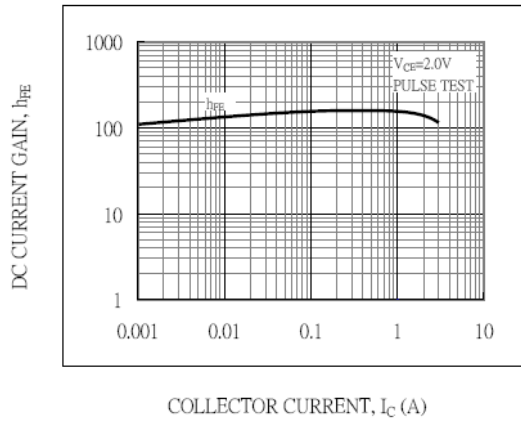
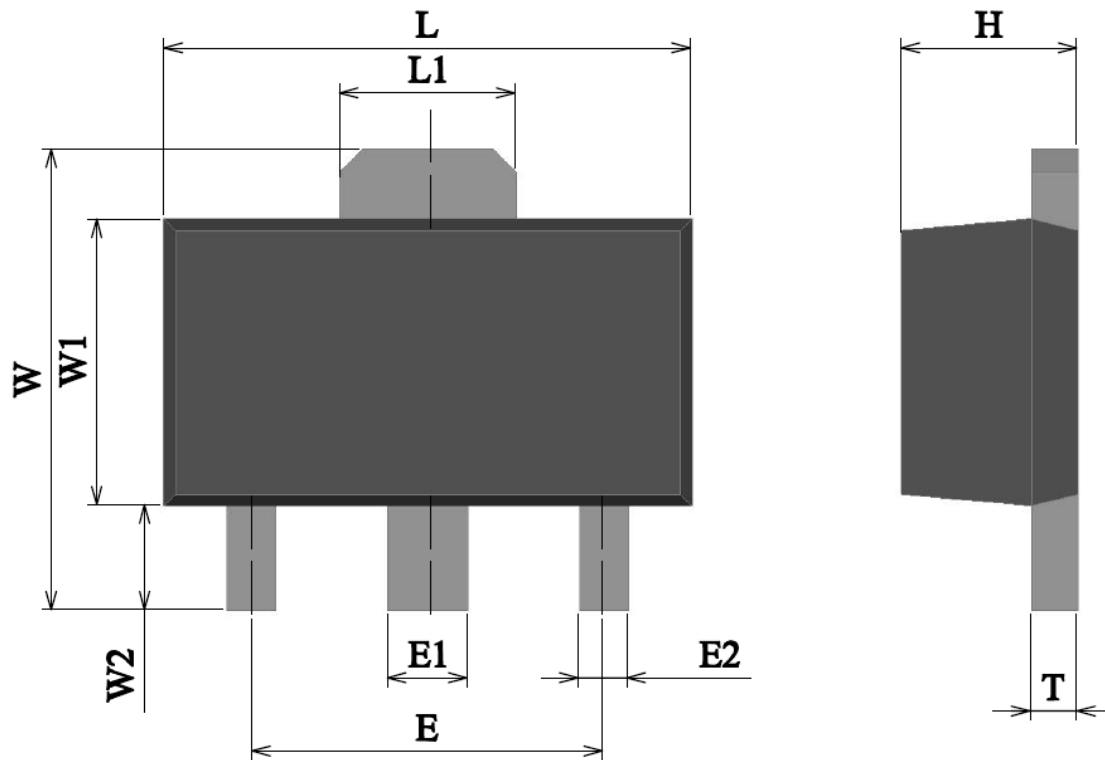


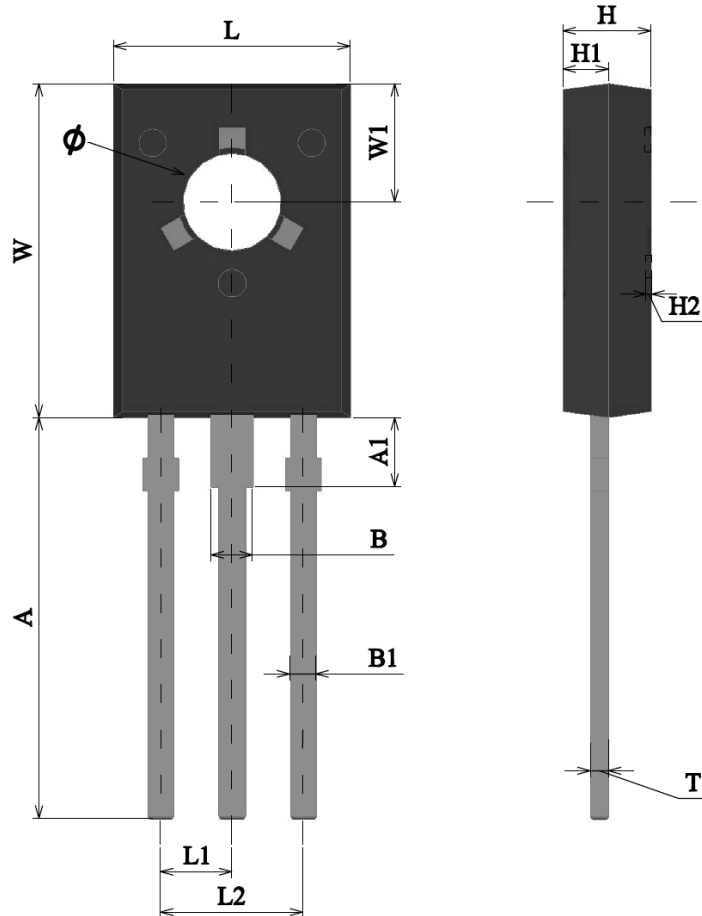
FIG.7 - DC CURRENT GAIN, BASE TO EMITTER VOLTAGE vs. COLLECTOR CURRENT

## SOT-89 DIMENSION



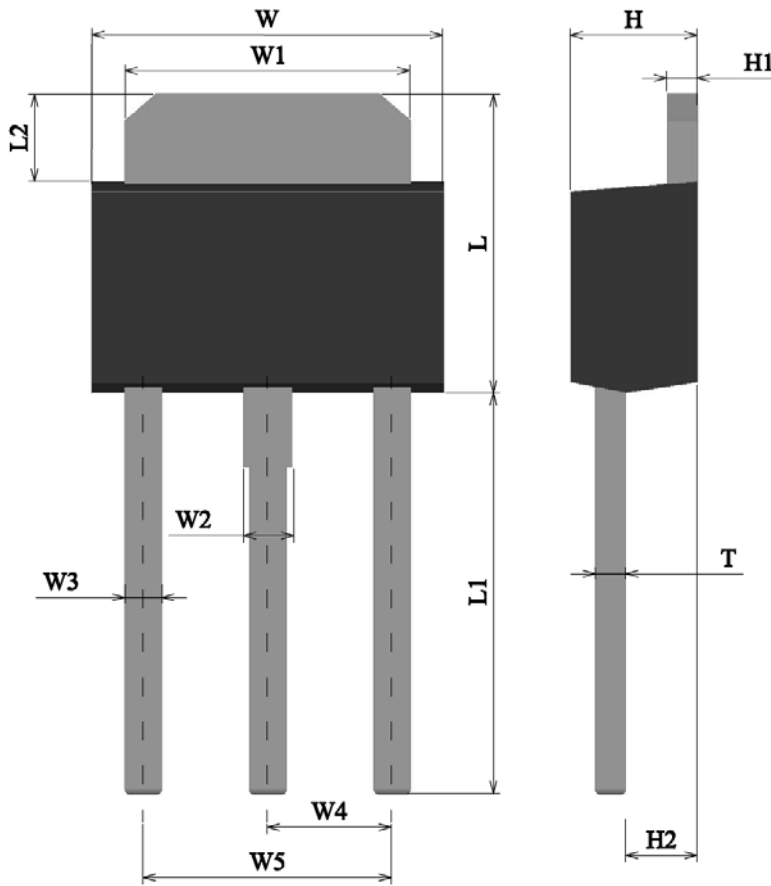
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
L	4.40	4.70	0.173	0.185
L1	1.55	1.75	0.061	0.069
E	3.00 TYP		0.118 TYP	
E1	0.40	0.58	0.016	0.023
E2	0.32	0.52	0.013	0.020
W	3.94	4.25	0.155	0.167
W1	2.30	2.60	0.091	0.102
W2	0.90	1.20	0.035	0.047
H	1.45	1.60	0.057	0.063
T	0.35	0.44	0.014	0.017

## TO-126 DIMENSION



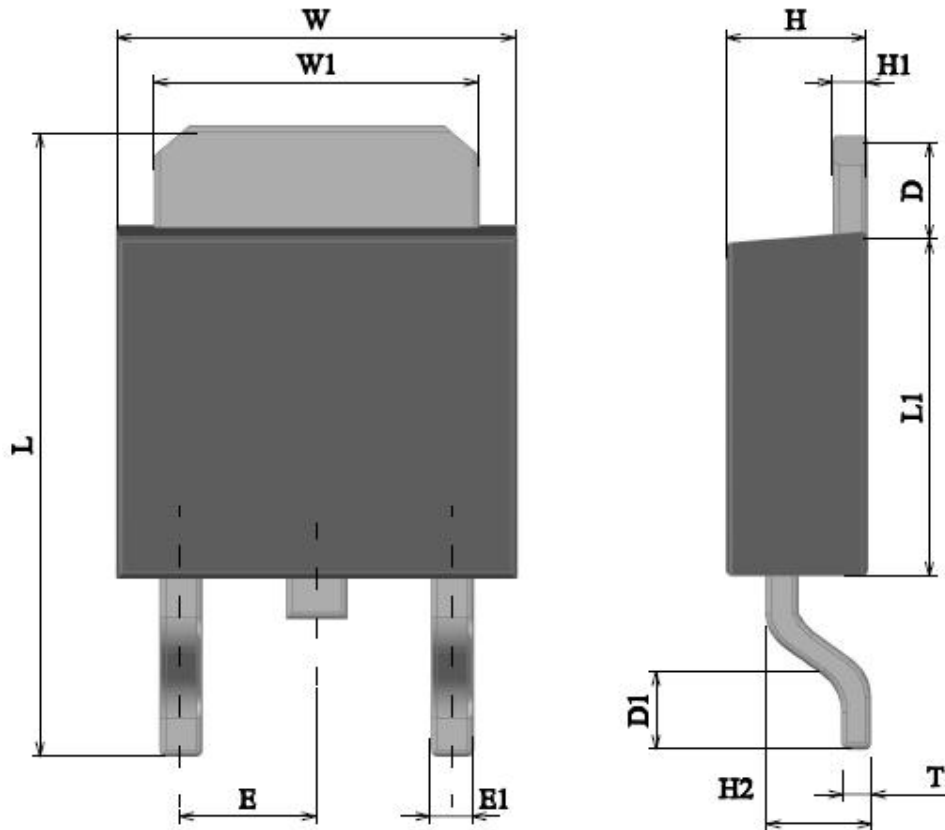
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
L	7.40	7.80	0.291	0.307
L1	2.29 TYP		0.090 TYP	
L2	4.48	4.68	0.176	0.184
W	10.60	11.00	0.417	0.433
W1	3.90	4.10	0.154	0.161
A	15.30	15.70	0.602	0.618
A1	2.10	2.30	0.083	0.091
B	1.17	1.37	0.046	0.054
B1	0.66	0.86	0.026	0.034
H	2.50	2.90	0.098	0.114
H1	1.1	1.50	0.043	0.059
H2	-	0.30	-	0.012
T	0.45	0.60	0.018	0.024
$\Phi$	3	3.2	0.118	0.126

## TO-251 DIMENSION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
L	5.40	5.70	0.213	0.224
L1	7.50	7.90	0.295	0.311
L2	1.35	1.65	0.053	0.065
W	6.35	6.65	0.250	0.262
W1	5.20	5.40	0.205	0.213
W2	0.70	0.90	0.028	0.035
W3	0.50	0.70	0.020	0.028
W4	2.3 TYP		0.091 TYP	
W5	4.54	4.70	0.179	0.185
H	2.20	2.40	0.087	0.094
H1	0.43	0.58	0.017	0.023
H2	1.05	1.35	0.041	0.053
T	0.43	0.58	0.017	0.023

## TO-252(DPAK) DIMENSION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
L	8.00	10.00	0.315	0.394
L1	5.30	5.70	0.209	0.224
D	0.77	1.60	0.030	0.063
D1	0.51	1.78	0.020	0.070
W	6.30	6.80	0.248	0.268
W1	4.45	5.50	0.175	0.217
E	2.3 Nominal		0.091 Nominal	
E1	-	0.97	-	0.038
H	2.03	2.53	0.080	0.100
H1	0.40	1.01	0.016	0.040
H2	1.30	1.80	0.051	0.071
T	0.43	0.60	0.017	0.024