

BD238

Rev.E Mar.-2016

/ Descriptions

Silicon PNP transistor in a TO-18 Plastic Package.

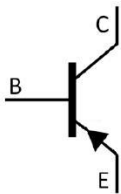
/ Features

Complementary pair with BD237.

/ Applications

Medium power linear and switching applications.

/ Equivalent Circuit



/ Pinning



PIN1 Emitter PIN 2 Collector PIN 3 Base

/ h_{FE} Classifications & Marking

See Marking Instructions

/ Absolute Maximum Ratings(Ta=25)

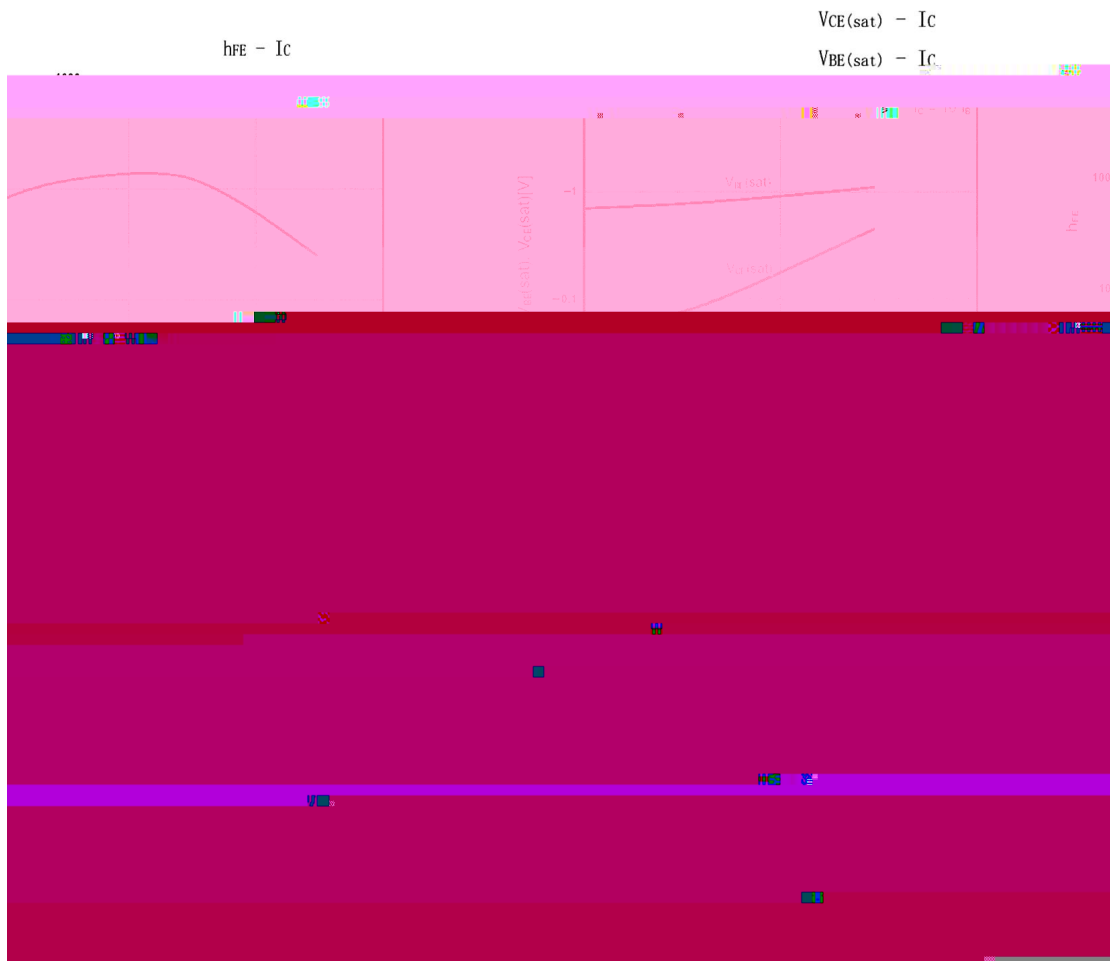
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	-100	V
Collector to Emitter Voltage	V_{CEO}	-80	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current - Continuous	I_C	-2.0	A
Collector Current – Continuous	I_{CM}	-6.0	A
Collector Power Dissipation	$P_C(T_C=25^{\circ}C)$	20	W
Junction Temperature	T_j	150	$^{\circ}C$
Storage Temperature Range	T_{stg}	-55 150	$^{\circ}C$

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	$*V_{CEO}$	$I_C=-100mA$ $I_B=0$	-80			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-80V$ $I_E=0$			-0.1	mA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=-5.0V$ $I_C=0$			-1.0	mA
DC Current Gain	$*h_{FE(1)}$	$V_{CE}=-2.0V$ $I_C=-150mA$	40			
	$*h_{FE(2)}$	$V_{CE}=-2.0V$ $I_C=-1.0A$	25			
Collector to Emitter Saturation Voltage	$*V_{CE(sat)}$	$I_C=-1.0A$ $I_B=-0.1A$			-0.6	V
Base to Emitter Voltage	$*V_{BE}$	$V_{CE}=-2.0V$ $I_C=-1.0A$			-1.3	V
Transition Frequency	f_T	$V_{CE}=-10V$ $I_C=-250mA$	3.0			MHz

* Pulse test: pulse width =300 μ s;duty cycle 1.5%. μ

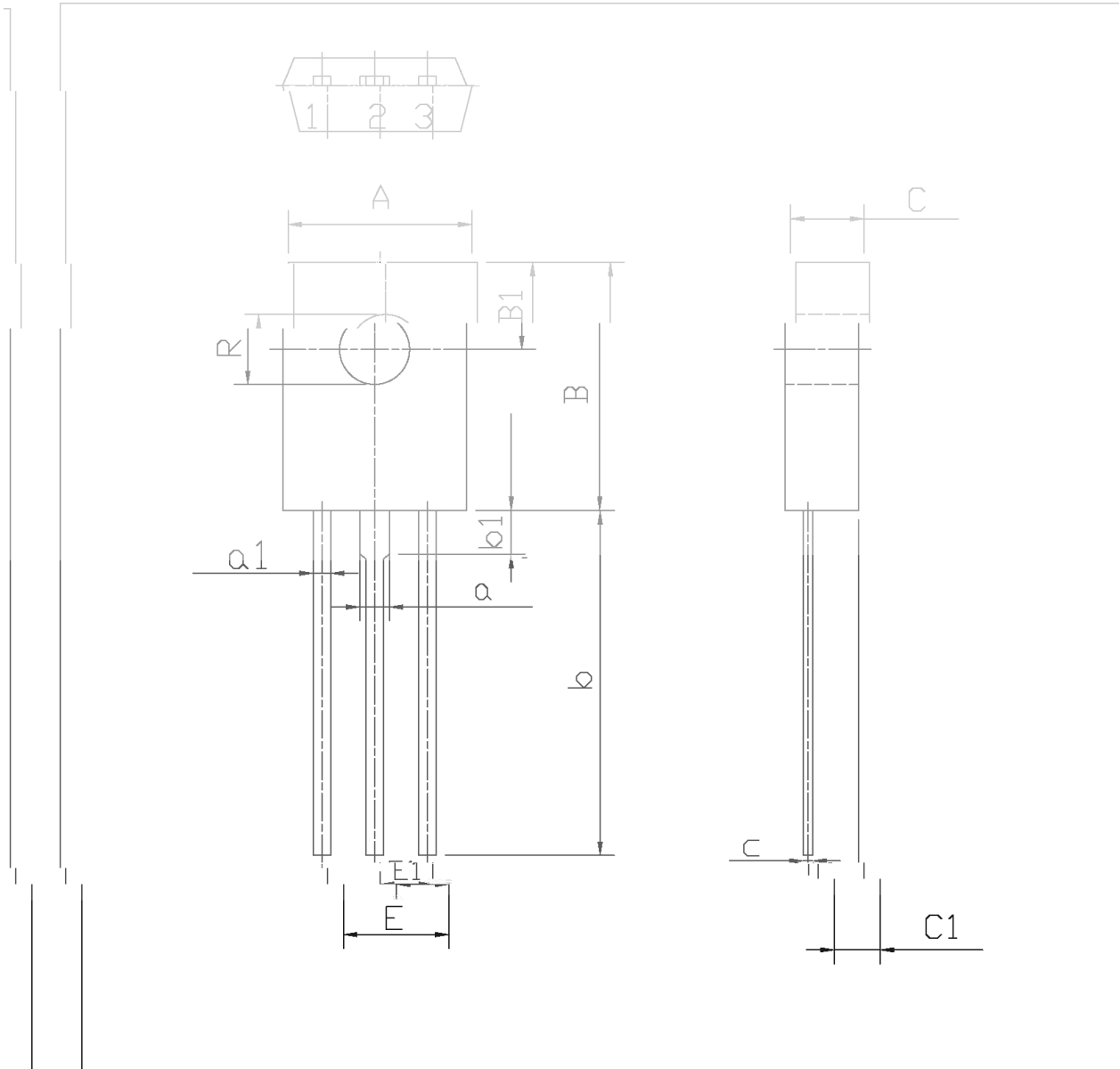
/ Electrical Characteristic Curve



/ Package Dimensions

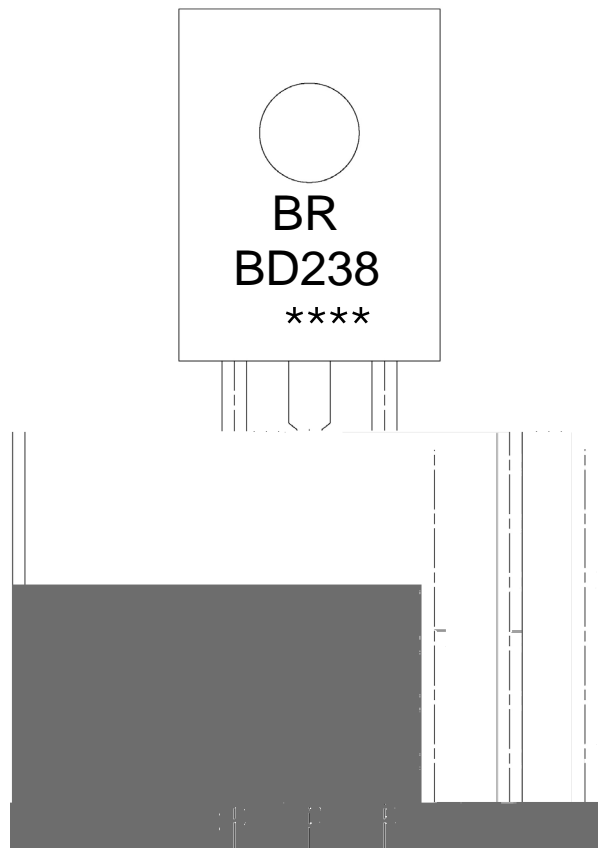
TU-12BT

单位: mm



Symbol	Dimension in Millimeters		Symbol	Dimension in Millimeters	
	Min	Max		Min	Max
A	7.8	8.2	a1	0.65	0.85
B	10.8	11.2	E	4.4	4.8
B1	3.8	4.2	C	3.1	3.3
R	2.05	3.15	C1	1.9	2.1
b	14	16	c	0.3	0.6
b1	1.9		a	1.27	
E1	2.1	2.5			

/ Marking Instructions



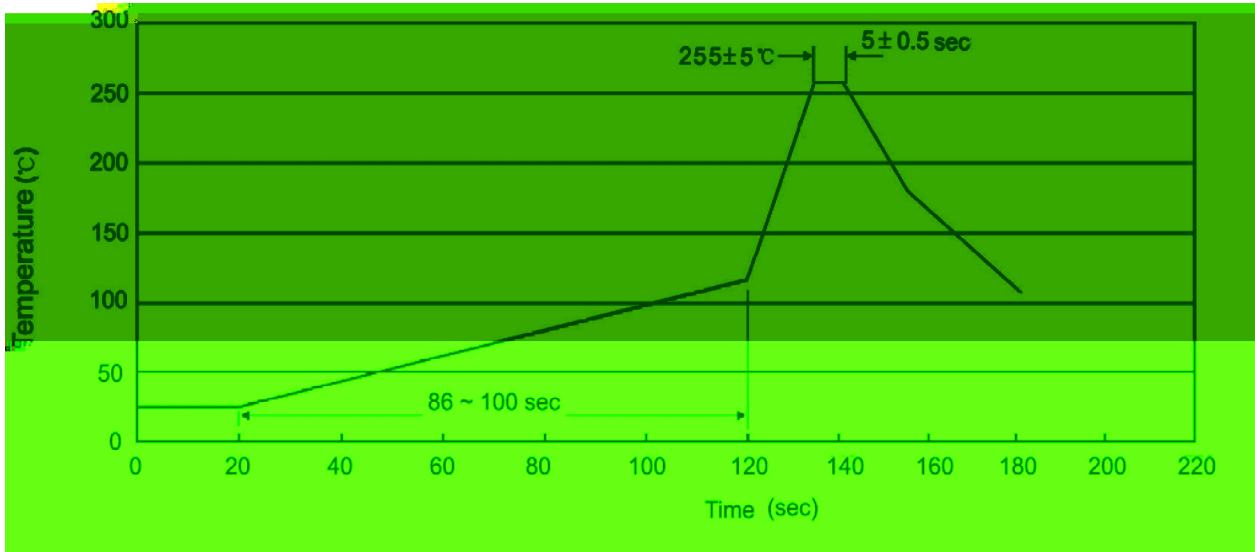
Note:

BR: Company Code

BD238: Product Type.

****: Lot No. Code, code change with Lot No.

() / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-----|-----|----|----------|---|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 255 | 5 | 5 | 0.5sec; | 2.Peak Temp.:255 5 , Duration:5 0.5sec. |
| 3 | | | 2 | 10 /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

270 5 10 1 sec. Temp.:270±5°C Time:10±1 sec

/ Packaging SPEC.

/ BULK

Package Type	Units			Dimension	(unit mm ³)
	Units/Tube /	Tubes/Inner Box /	Units/Inner Box /		