

**BD238**  
Rev.E Mar.-2016

TO-126F          PNP          Silicon PNP transistor in a TO-126F Plastic Package.

**/ 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	$P_C(T_C=25 )$	20	W
Junction Temperature	$T_j$	150	
Storage Temperature Range	$T_{stg}$	-55 150	

**/ Electrical Characteristics(Ta=25 )**

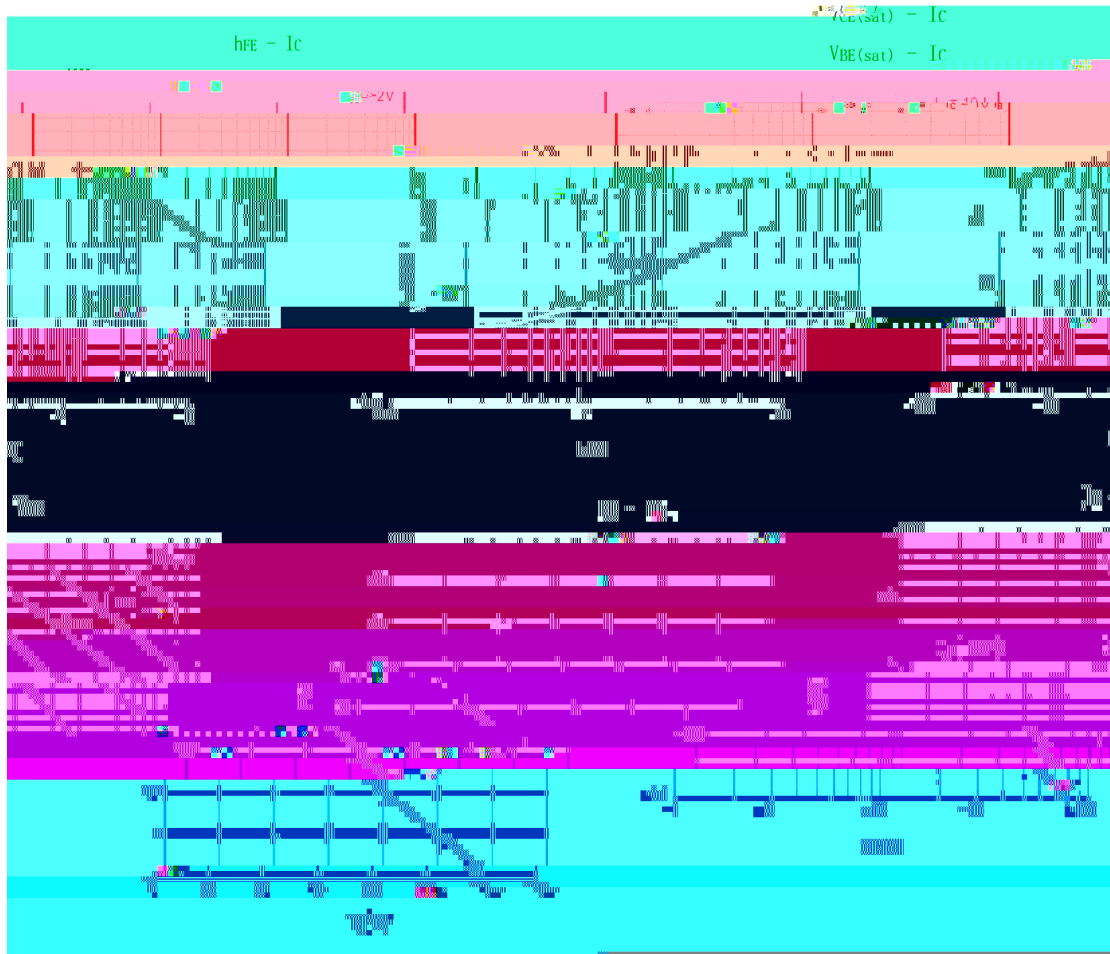
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	* $V_{CEO}$	$I_C=-100mA$ $I_B=0$	-80			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=-80V$ $I_E=0$			-0.1	mA
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=-5.0V$ $I_C=0$			-1.0	mA
DC Current Gain	* $h_{FE(1)}$	$V_{CE}=-2.0V$ $I_C=-150mA$	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 =300μs;duty cycle 1.5%.

= 300μs

1.5%

/ Electrical Characteristic Curve



**/ Package Dimensions**



**/ Marking Instructions**



BR

BD238

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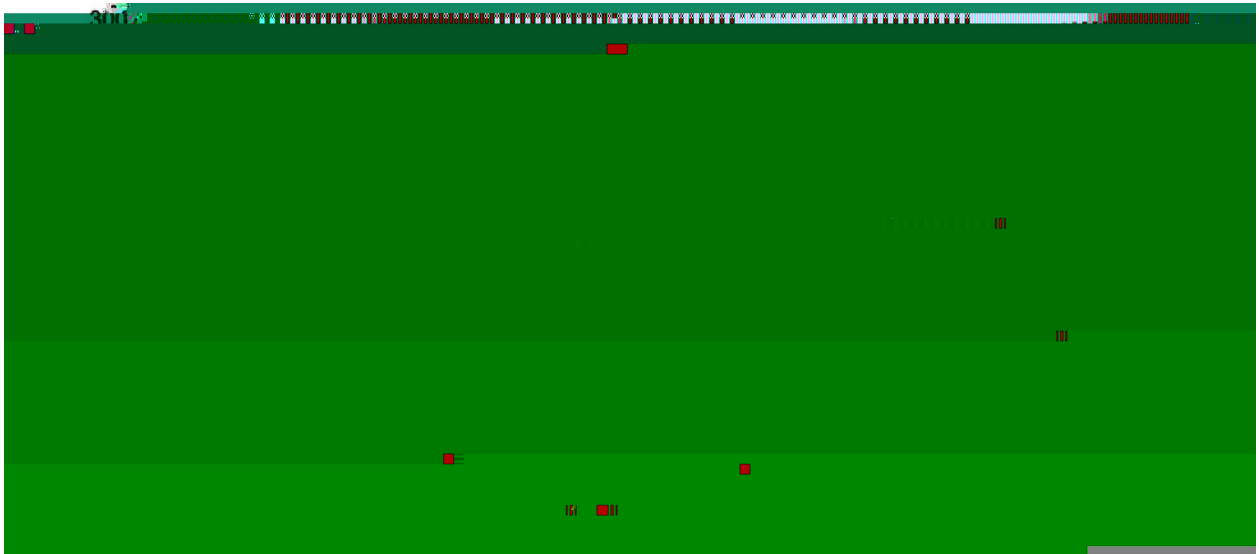
Note:

BR: Company Code

BD238: Product Type.

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

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



- |   |       |     |           |        |   |                                      |
|---|-------|-----|-----------|--------|---|--------------------------------------|
| 1 | 25    | 150 | 60        | 90sec; | Note:                                   | 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                      Time:10±1 sec

**/ Packaging SPEC.**

/ BULK

Package Type	Units	Dimension	(unit mm <sup>3</sup> )
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