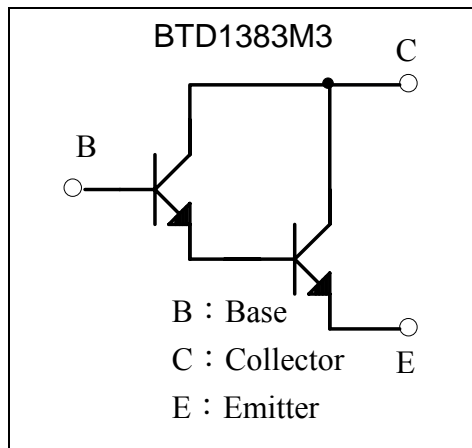
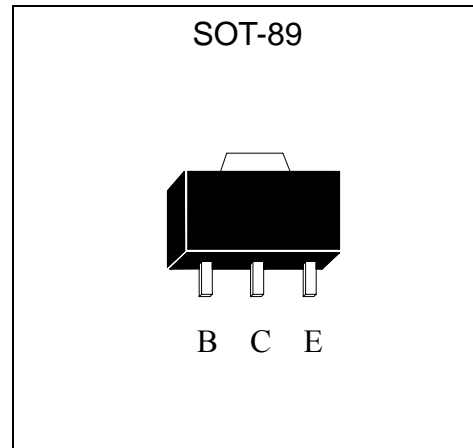


General Purpose NPN Epitaxial Planar Transistor

BTD1383M3

Description

- The BTD1383M3 is a darlington amplifier transistor.
- Pb-free package

Symbol

Outline

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CB0}	40	V
Collector-Emitter Voltage	V_{CES}	32	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current (DC)	I_C	0.3	A
Collector Current (Pulse)	I_{CP}	1.5 (Note 1)	A
Power Dissipation	P_d	0.6	W
		1 (Note 2)	W
		2 (Note 3)	W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	208	$^\circ\text{C/W}$
		125 (Note 2)	$^\circ\text{C/W}$
		62.5 (Note 3)	$^\circ\text{C/W}$
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~+150	$^\circ\text{C}$

Note : 1. Single Pulse $P_w \leq 350\mu\text{s}$, Duty $\leq 2\%$.

2. When mounted on a FR-4 PCB with area measuring $10 \times 10 \times 1$ mm.

3. When mounted on a ceramic board with area measuring $40 \times 40 \times 1$ mm.



Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	40	-	-	V	$I_C=100\mu A$
BV_{CES}	32	-	-	V	$I_C=1mA, R_{BE}=0\Omega$
BV_{EBO}	10	-	-	V	$I_E=100\mu A$
I_{CBO}	-	-	100	nA	$V_{CB}=30V$
I_{EBO}	-	-	100	nA	$V_{EB}=10V$
$*V_{CE(sat)}$	-	-	1.5	V	$I_C=200mA, I_B=0.4mA$
$*h_{FE1}$	10K	-	-		$V_{CE}=5V, I_C=10mA$
$*h_{FE2}$	20K	-	-		$V_{CE}=5V, I_C=100mA$
f_T	-	250	-	MHz	$V_{CE}=5V, I_C=10mA, f=100MHz$
Cob	-	5	-	pF	$V_{CB}=10V, I_E=0A, f=1MHz$

*Pulse Test: Pulse Width $\leq 380\mu s$, Duty Cycle $\leq 2\%$

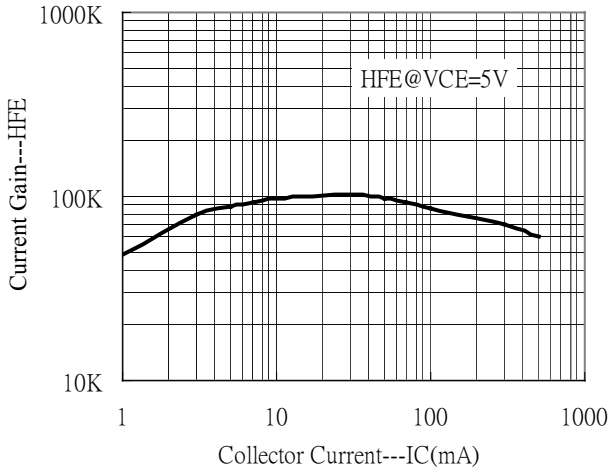
Ordering Information

Device	Package	Shipping	Marking
BTD1383M3	SOT-89 (Pb-free)	1000 pcs / Tape & Reel	WA

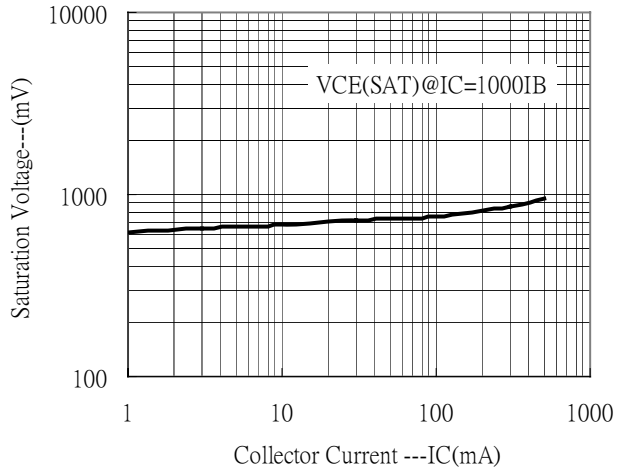


Characteristic Curves

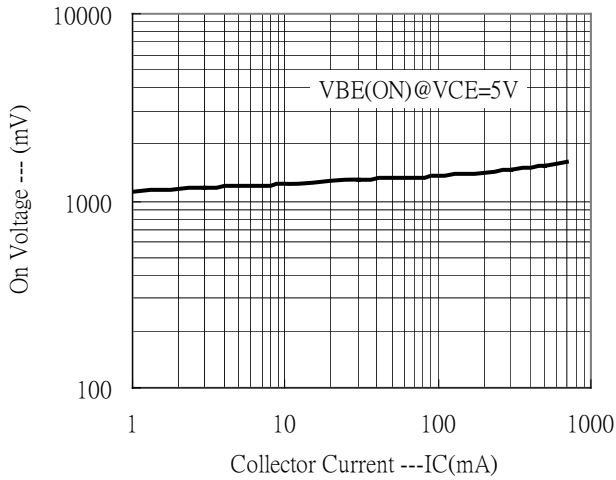
Current Gain vs Collector Current



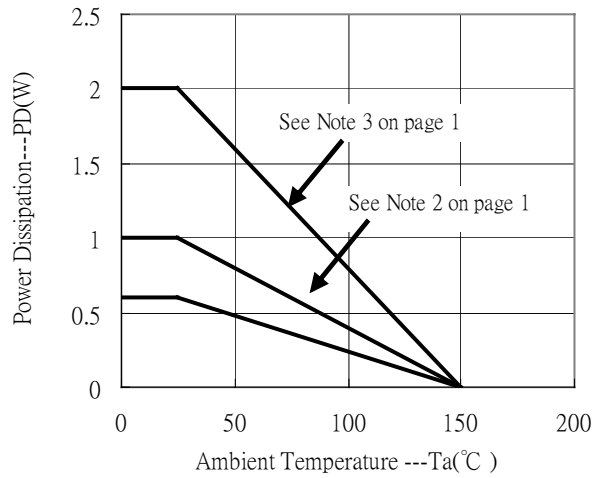
Saturation Voltage vs Collector Current



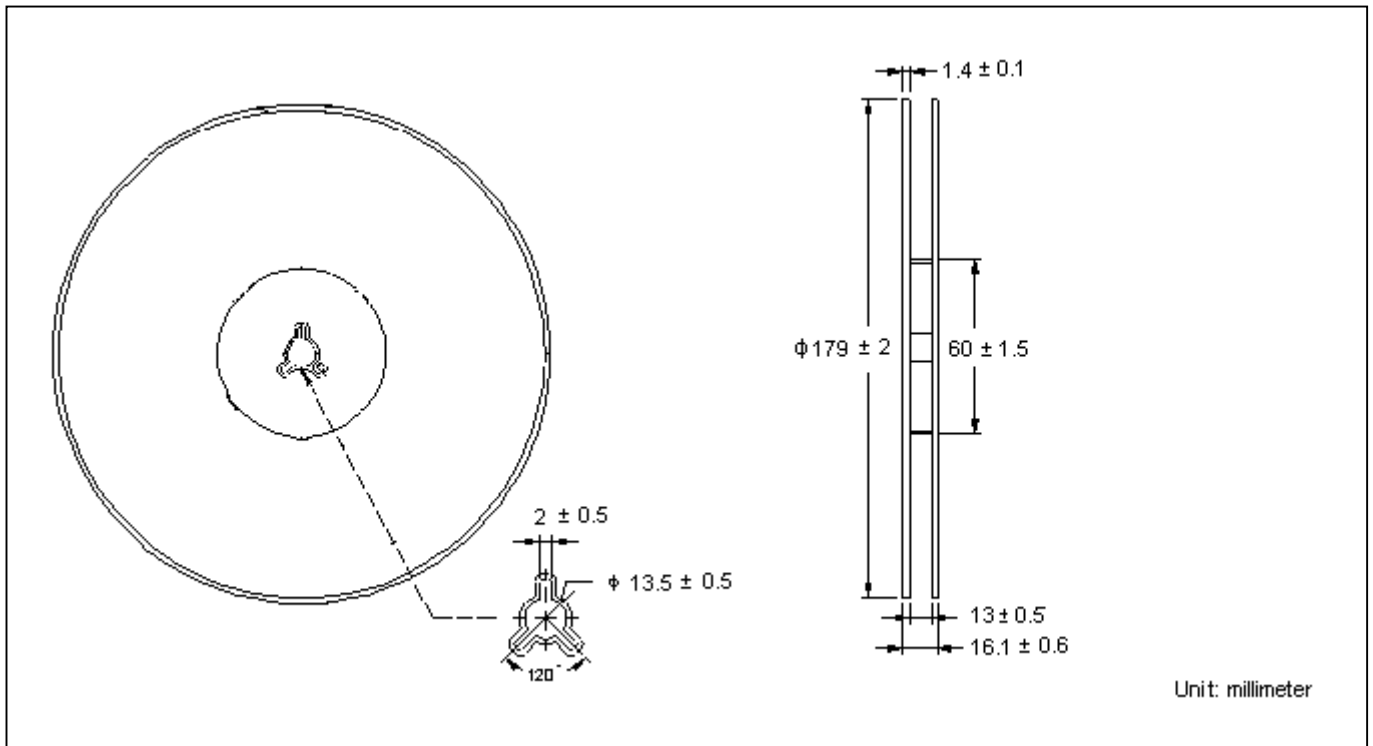
On Voltage vs Collector Current



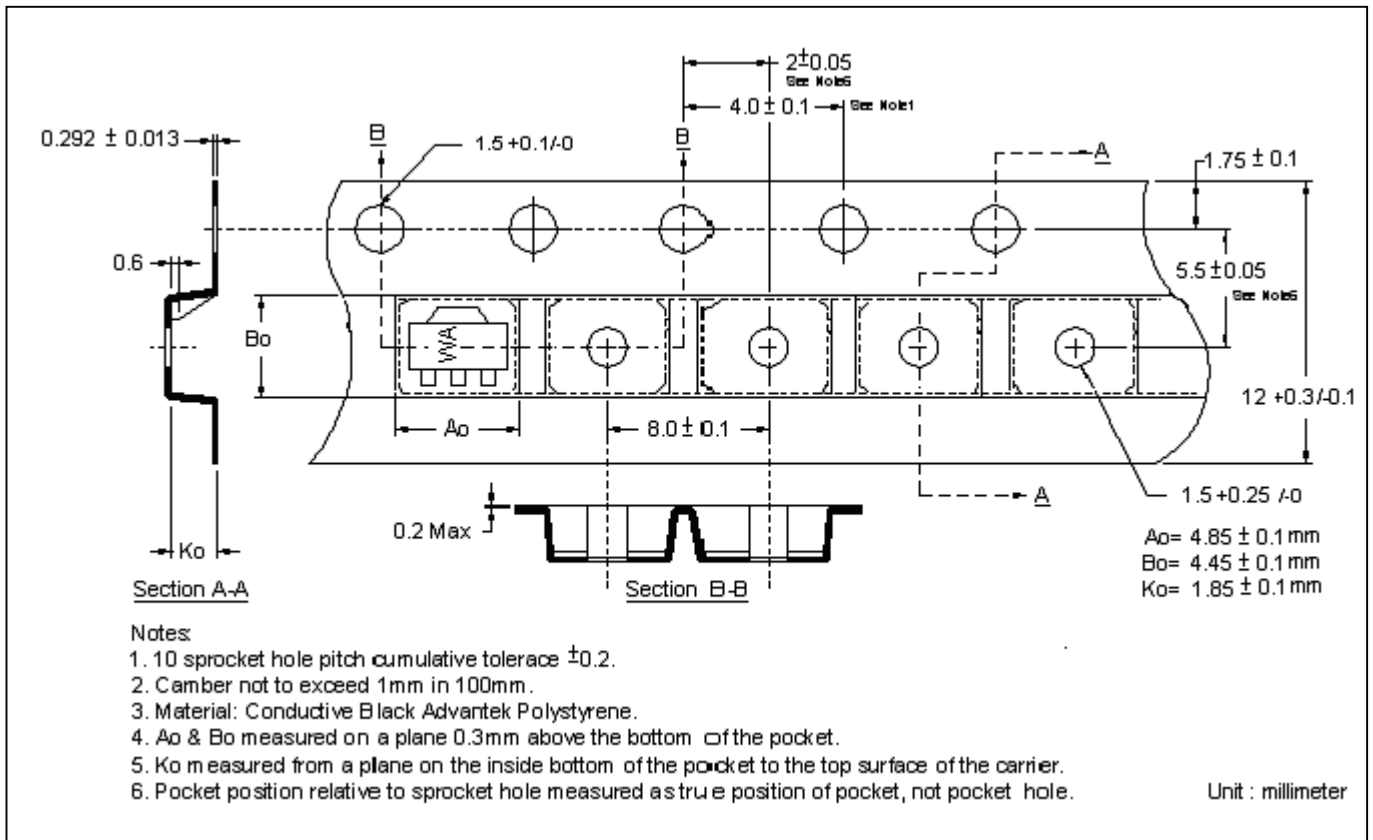
Power Derating Curves



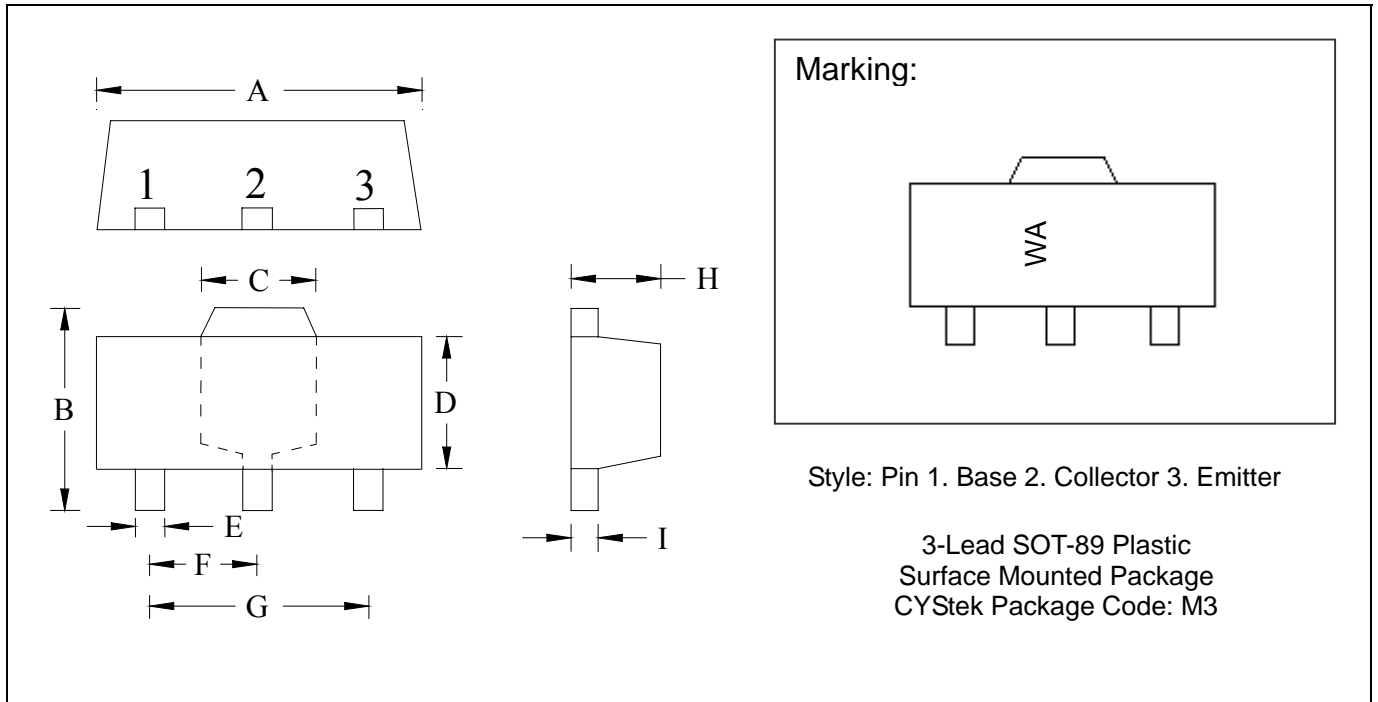
Reel Dimension



Carrier Tape Dimension



SOT-89 Dimension



*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1732	0.1811	4.40	4.60	F	0.0583	0.0598	1.48	1.527
B	0.1594	0.1673	4.05	4.25	G	0.1165	0.1197	2.96	3.04
C	0.0591	0.0663	1.50	1.70	H	0.0551	0.0630	1.40	1.60
D	0.0945	0.1024	2.40	2.60	I	0.0138	0.0161	0.35	0.41
E	0.01417	0.0201	0.36	0.51					

Notes: 1.Controlling dimension: millimeters.
 2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
 3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead: 42 Alloy ; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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