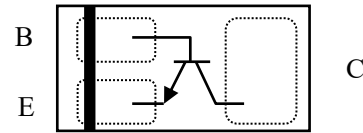


### Feature

This device is Pb-Free, Halogen Free/BFR Free and RoHS compliant.

- Package: DFN1006-3L
- Emitter -Base Breakdown Voltage 6V
- 500mA continuous collector current
- NPN switch transistor



Top View

### Mechanical Characteristics

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260°C
- Device meets MSL 1 requirements
- Pure tin plating: 7 ~ 17 um

### Electrical characteristics per line@25°C ( unless otherwise specified)

Parameter		Symbol	Value	Units
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	40	V
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	40	V
Emitter -Base Breakdown Voltage		$V_{(BR)EBO}$	6	V
Collector Current		$I_C$	500	mA
Peak Collector Current		$I_{CM}$	1	A
Peak Base Current		$I_{BM}$	100	mA
Maximum Power Dissipation (Note 1)(Note 2)	$T_A=25^{\circ}C$	$P_D$	250	mW
	$T_A=25^{\circ}C$	$P_D$	590	
Storage Temperature		$T_{stg}$	-65~150	°C
Max. Operating Junction Temperature		$T_j$	150	°C

## Thermal resistance

Parameter	Symbol	Min.	Typ.	Max.	Units
Junction-to-Ambient Thermal Resistance (Note 1)(Note 2)	$R_{\theta JA}$			500	°C/W
Junction-to-Ambient Thermal Resistance (Note 3)(Note 2)	$R_{\theta JA}$			212	

## Absolute maximum rating@25°C

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Collector-Base Breakdown Voltage	$BV_{CBO}$		40			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$		40			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$		6			V
Collector Cut-off Current ( $I_E=0$ )	$I_{CBO}$	$V_{CB}=30V$			0.1	$\mu A$
Emitter Cut-off Current ( $I_C=0$ )	$I_{EBO}$	$V_{EB}=-5V$			0.1	$\mu A$
DC Current Gain	$h_{FE}$	$I_C=500mA, V_{CE}=2V$	50			-
DC Current Gain	$h_{FE}$	$I_C=10mA, V_{CE}=2V$	200			-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100mA, I_B=-5mA$	-		100	mV
Transition frequency	$f_T$	$V_{CE}=5V, I_C=100mA, f=100MHz$	250			MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0mA, f=1MHz$			6	pF

## Note:

1. Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.
2. Reflow soldering is the only recommended soldering method.
3. Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 1cm<sup>2</sup>

Typical Characteristics

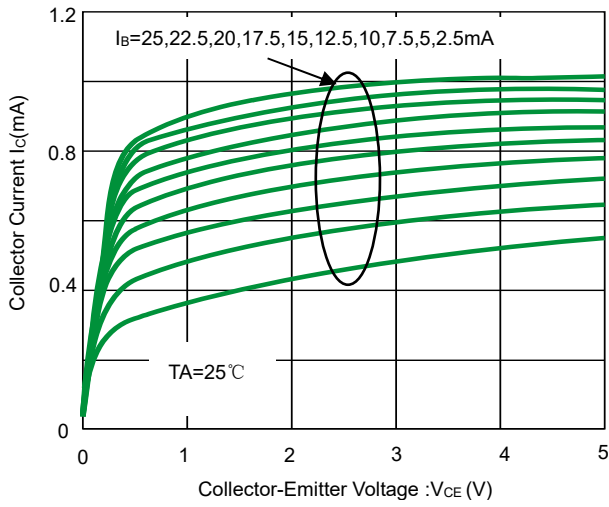


Figure1.Static Characteristic

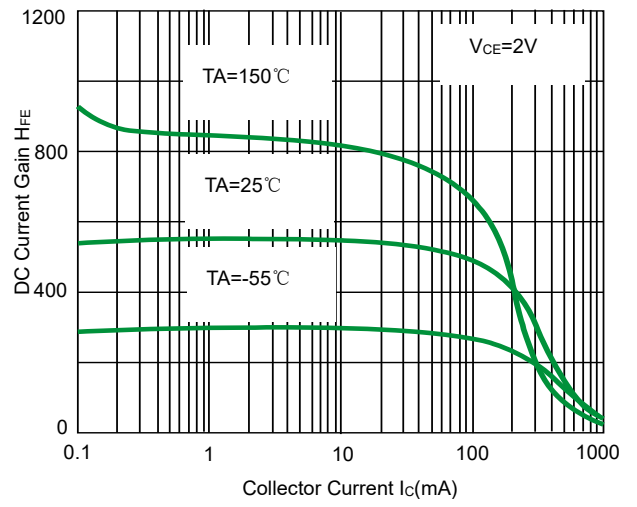


Figure2.DC Current Gain

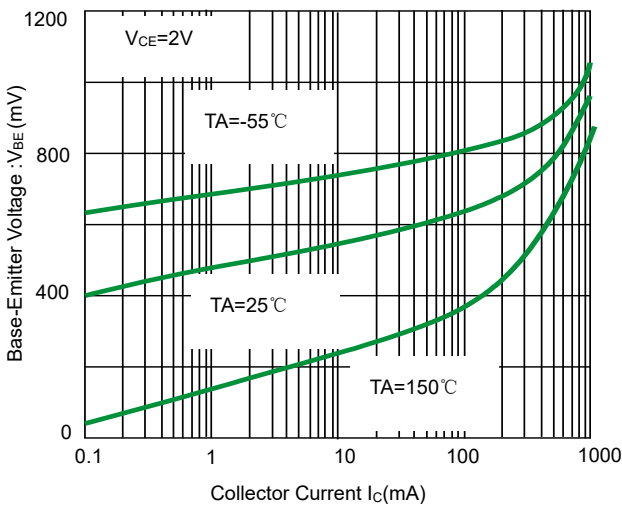


Figure3.Base-emitter voltage as a function of collector current

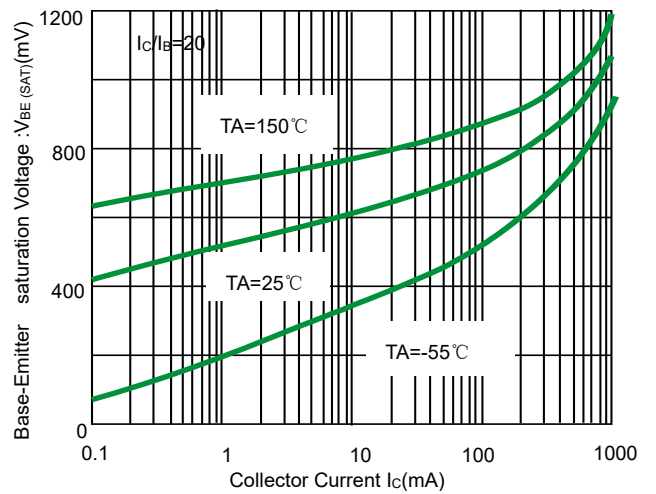


Figure4. Base-emitter saturation voltage as a function of collector current

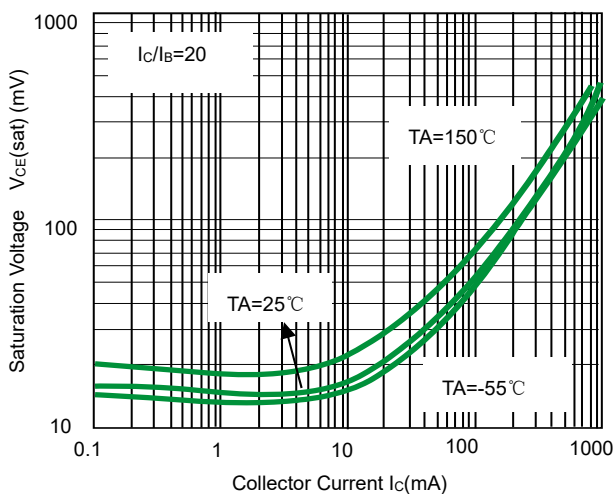
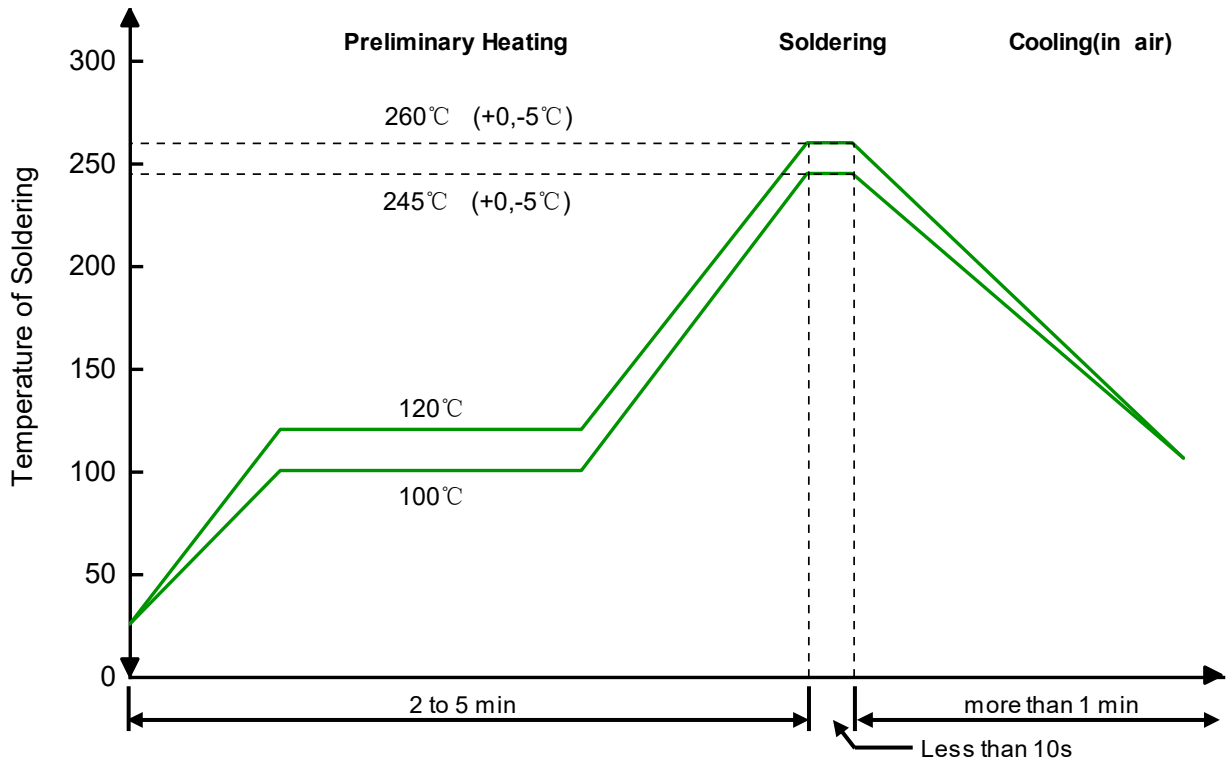


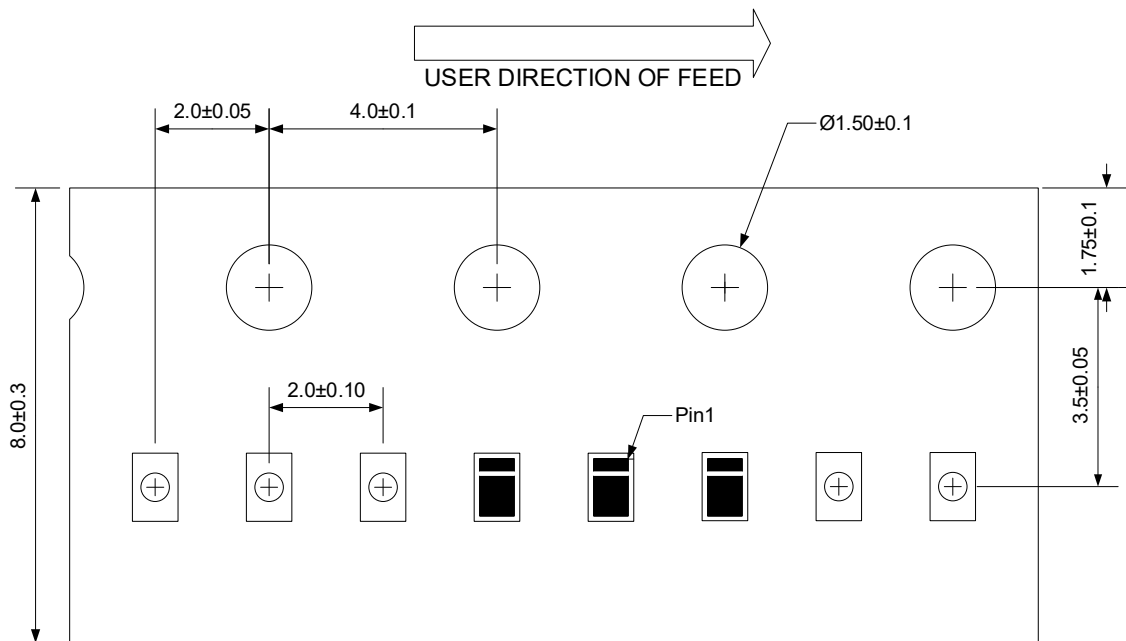
Figure5. Collector-Emmitter Saturation Voltage

Solder Reflow Recommendation



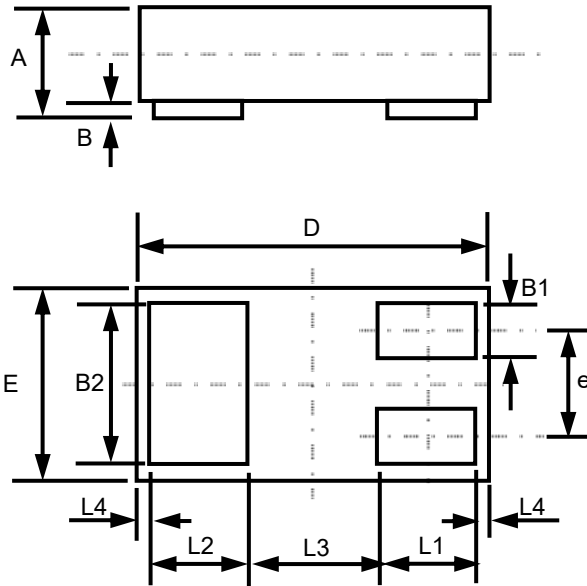
Remark: Pb free for 260°C; Pb for 245°C.

Load with information

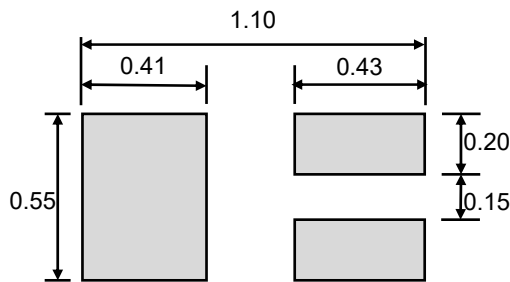


Unit:mm

Product dimension (DFN1006-3L)



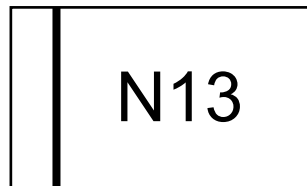
Dim	Millimeters		
	MIN	Typ	MAX
A	0.33	0.47	0.498
B	0.00	0.03	0.05
B1	0.10	0.15	0.20
B2	0.45	0.50	0.55
D	0.85	1.00	1.15
E	0.45	0.60	0.75
e	--	0.35	--
L1	0.20	0.25	0.30
L2	0.20	0.25	0.30
L3	--	0.39	--
L4	--	0.05	--



Unit: mm

Suggested PCB Layout

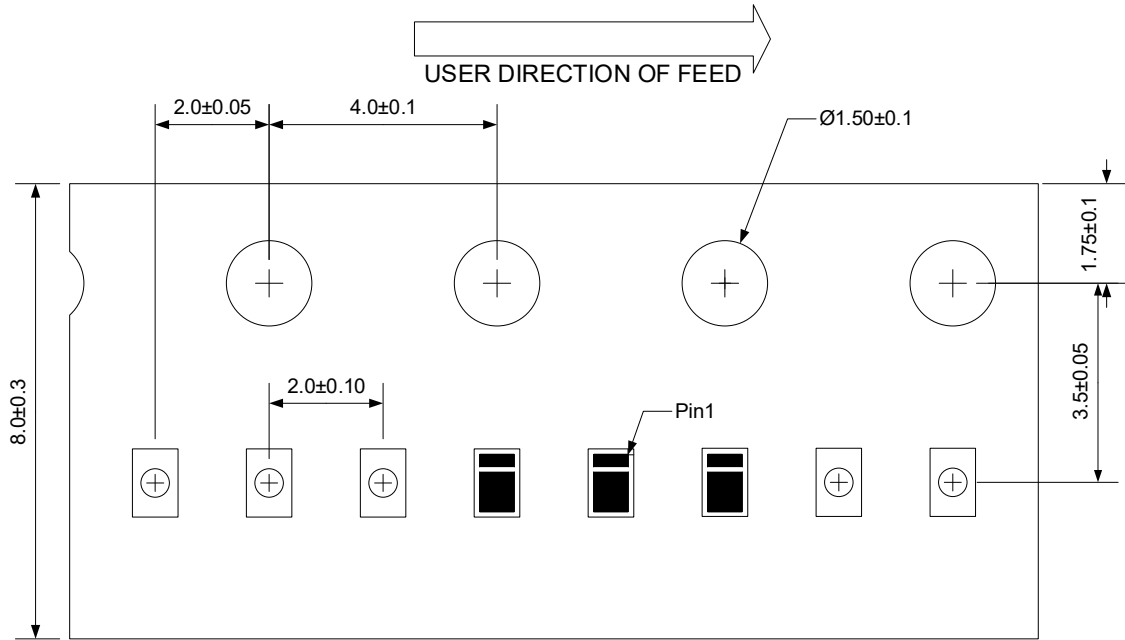
Marking information



Ordering information


Device	Package	Reel	Shipping
PNT3FD403E0-5	DFN1006-3L (Pb-Free)	7"	10000 / Tape & Reel

Load with information



Unit:mm


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