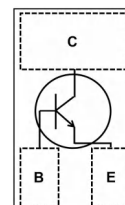
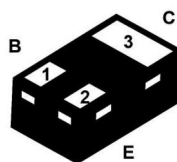


Features

Supper high density cell design
High collector current capability: $I_C=0.2A$
igh energy efficiency due to less heat generation
High Power and current handing capability
Low $V_{CE(sat)}$: $0.3V@I_C=50mA, I_B=5mA$

Applications

Charging circuits
Load Switching for portable device
Power management
PWM applications
Power switches (e.g. motors, fans)



DFN1006-3

Absolute Maximum Rating

Rating	Symbol	Min.	Max.	Unit
Collector-base voltage	V_{CBO}		60	V
Collector-emitter voltage	V_{CEO}		40	V
Emitter-base voltage	V_{EBO}		6	V
Collector current (DC)	I_C		200	mA
Collector Power Dissipation	P_C		400	mW
Storage Temperature Range	T_J		+150	°C
Junction Temperature Range	T_{STG}	-55	+150	°C
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$		310	°C/W

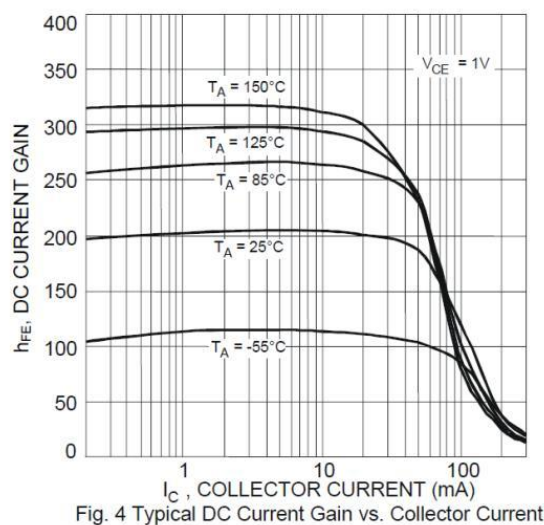
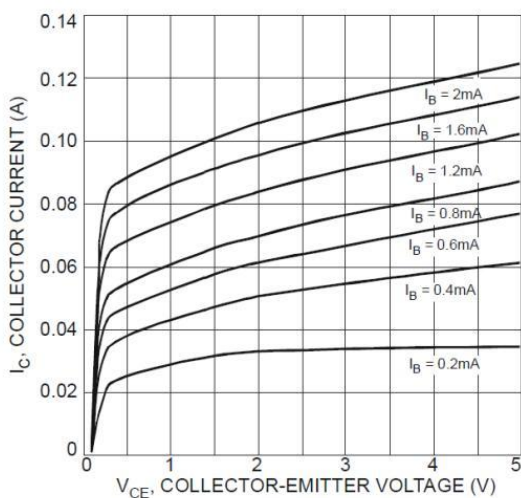
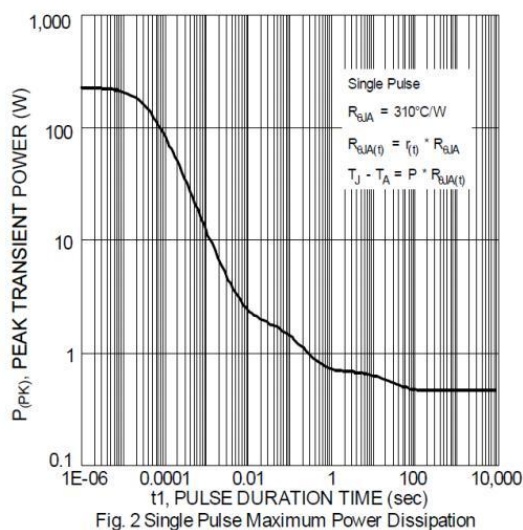
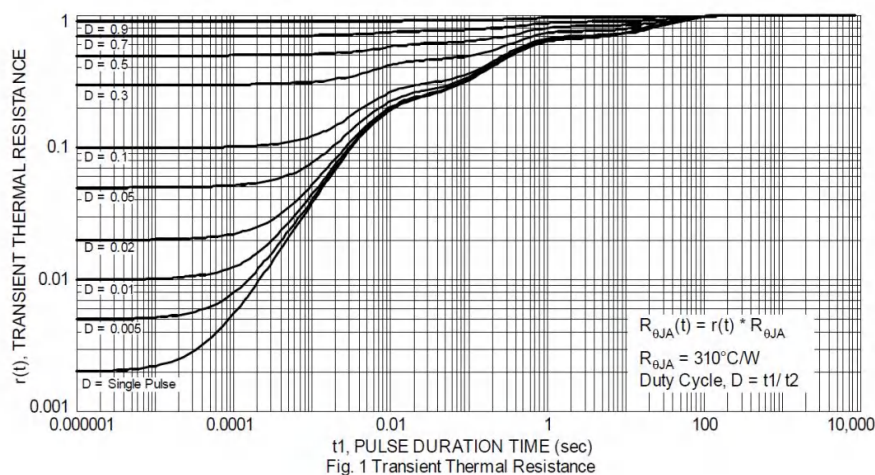
Note :Repetitive Rating: Pulse width limited by maximum junction temperature

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Max.	Units
Collector-base Breakdown Voltage	$V_{BR(CBO)}$	$I_C=10\mu A, I_E=0$	60		V
Collector-emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	40		V
Emitter-base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	6		V
Collector Cut-off Current	I_{CEX}	$V_{CE}=30V, V_{EB(off)}=3V$		50	nA
Base Cut-off Current	I_{BL}	$V_{CE}=30V, V_{EB(off)}=3V$		50	nA
DC current gain	$H_{FE(1)}$	$V_{CE}=1V, I_C=0.1mA$	40		
	$H_{FE(2)}$	$V_{CE}=1V, I_C=1mA$	70		
	$H_{FE(3)}$	$V_{CE}=1V, I_C=10mA$	100	300	
	$H_{FE(4)}$	$V_{CE}=1V, I_C=50mA$	60		
	$H_{FE(5)}$	$V_{CE}=1V, I_C=100mA$	30		
Collector-emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C=10mA, I_B=1mA$		0.2	V
	$V_{CE(sat)2}$	$I_C=50mA, I_B=5mA$		0.3	V
Base-emitter Saturation Voltage	$V_{BE(sat)1}$	$I_C=10mA, I_B=1mA$	0.65	0.85	V
	$V_{BE(sat)2}$	$I_C=50mA, I_B=5mA$		0.95	V
Transition frequency	F_T	$I_C=10mA, V_{CE}=20V;$ $f=100MHz$	300		MHz
Collector Output Capacitance	C_{ob}	$I_E=0, V_{CB}=5V, f=1MHz$		4	pF
Base Input Capacitance	C_{ib}	$I_C=0, V_{EB}=0.5V, f=1MHz$		8.5	pF
Delay Time	t_d	$V_{CC}=3V, V_{BE(off)}=0.5V,$ $I_C=10mA, I_{B1}=1mA$		35	ns
Rise Time	t_r			35	ns
Storage time	t_s	$V_{CC}=3V, I_C=10mA,$ $I_{B1}=I_{B2}=1mA$		200	ns
Fall Time	t_f			50	ns

Note :Repetitive Rating: Pulse width limited by maximum junction temperature

RATING AND CHARACTERISTIC CURVES



RATING AND CHARACTERISTIC CURVES

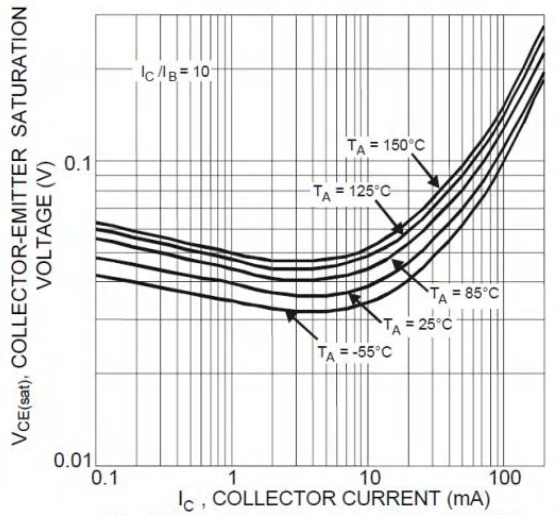


Fig. 5 Typical Collector-Emitter Saturation Voltage vs. Collector Current

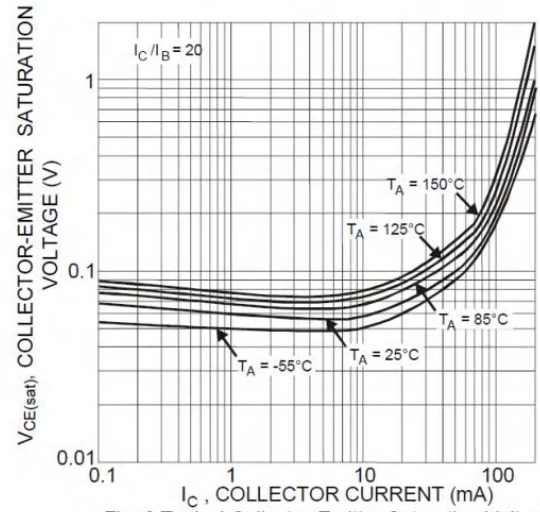


Fig. 6 Typical Collector-Emitter Saturation Voltage vs. Collector Current

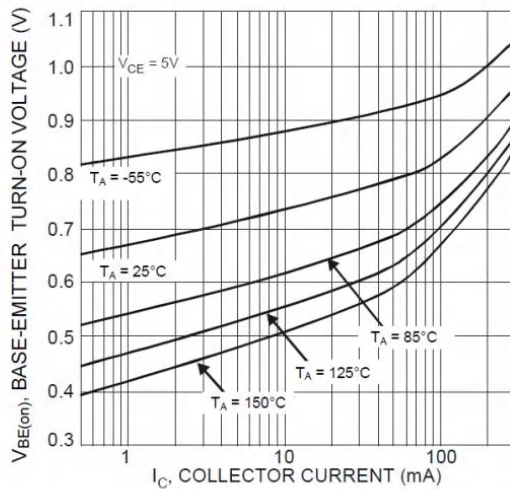


Fig. 7 Typical Base-Emitter Turn-On Voltage vs. Collector Current

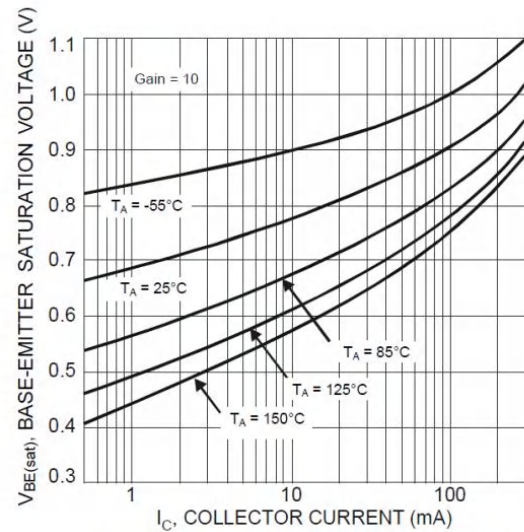
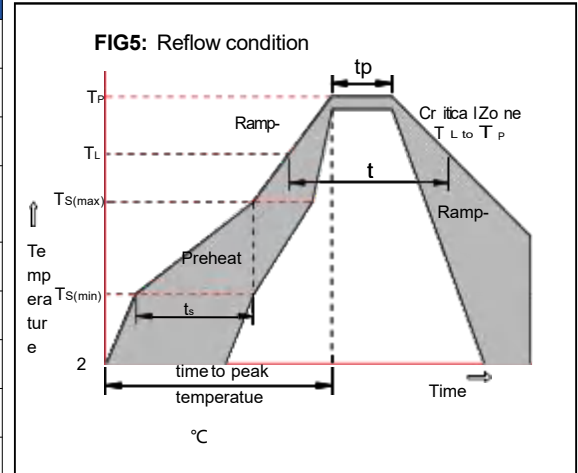


Fig. 8 Typical Base-Emitter Saturation Voltage vs. Collector Current

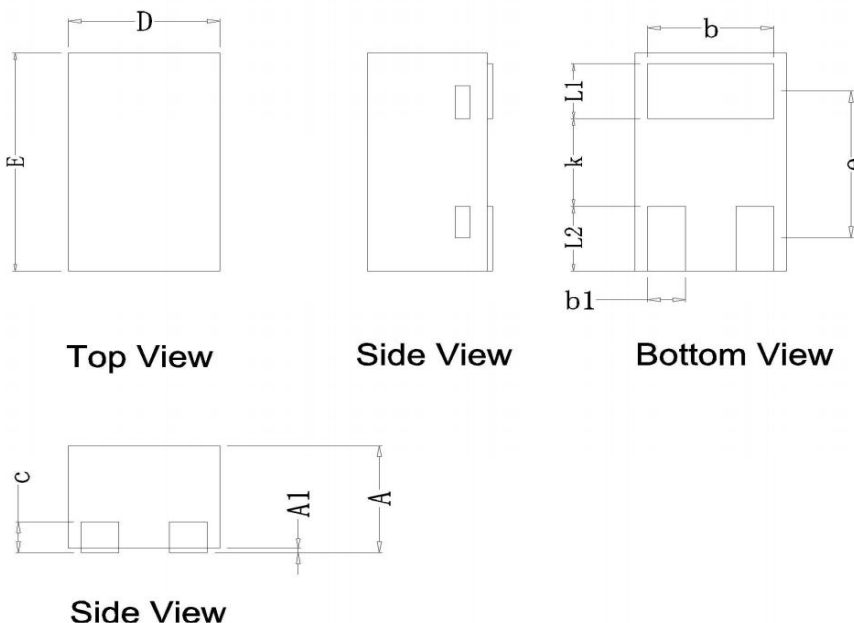
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150 °C
	-Temperature Max($T_{s(max)}$)	+200 °C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3 °C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3 °C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217 °C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5) °C
Time within 5 °C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6 °C/sec. Max
Time 25 °C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260 °C



Package Dimensions & Suggested Pad Layout

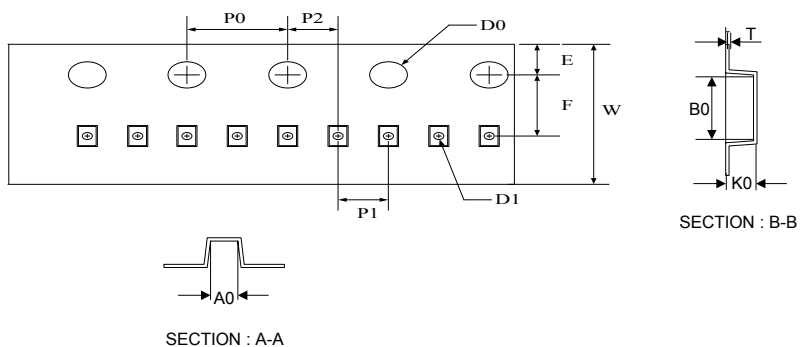
DFN1006-3L



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.425	0.475	0.525
A1	—	0.02	0.05
b	0.45	0.50	0.55
b1	0.10	0.15	0.20
c	0.127 REF		
D	0.50	0.60	0.70
e	0.675 BSC		
E	0.90	1.00	1.10
k	0.35	0.40	0.45
L1	0.20	0.25	0.30
L2	0.25	0.30	0.35

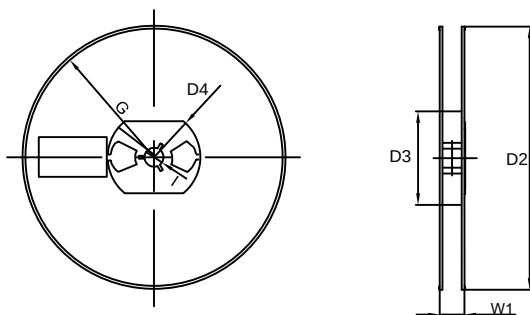
Tape & reel specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	2.00±0.20
P2	2.00±0.20
D0	1.55±0.20
D1	0.50±0.20
E	1.75±0.25
F	3.50±0.20
W	8.00±0.20
A0	0.70±0.20
B0	1.14±0.20
K0	0.60±0.20
T	0.20±0.20
D2	177.0±5.0
D3	55Min.
D4	R24.6±2.0
G	R82.0±2.0
I	13.0±2.0
W1	10.20±3.0

7" Reel



Quantity: 10000PCS