

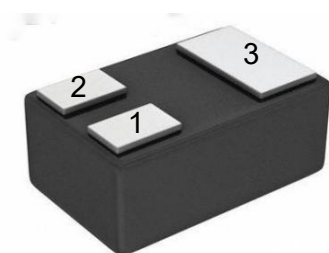
Features

- Low profile package
- Ideal for automated placement
- Complementary to MMBT2907ALP4 (PNP).
- Power Dissipation of 300mW
- High Stability and High Reliability
- RoHS Compliant

Mechanical Data

- Package: DFN1006-3L
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Tape Reel :10000pcs

Appearance & Symbol

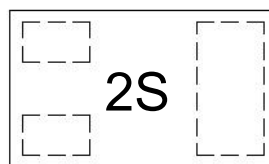
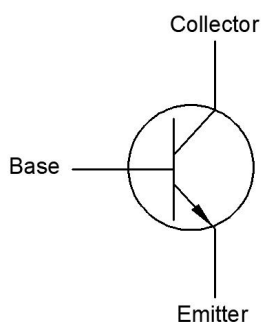


Package: DFN1006-3L
1: Base
2: Emitter
3: Collector

Applications

- amplifying signal
- Electronic switch
- Oscillating circuit
- variable resistance

Marking Information



2S= Marking Code

Absolute Maximum Ratings (T=25°C unless otherwise noted)

Parameter	Symbol	Value	Units
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current - Continuous	I_C	600	mA
Collector Power Dissipation	P_C	300	mW
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction Temperature	T_J	-55 to +150	°C
Junction and Storage Temperature	T_{STG}	-55 to +150	°C

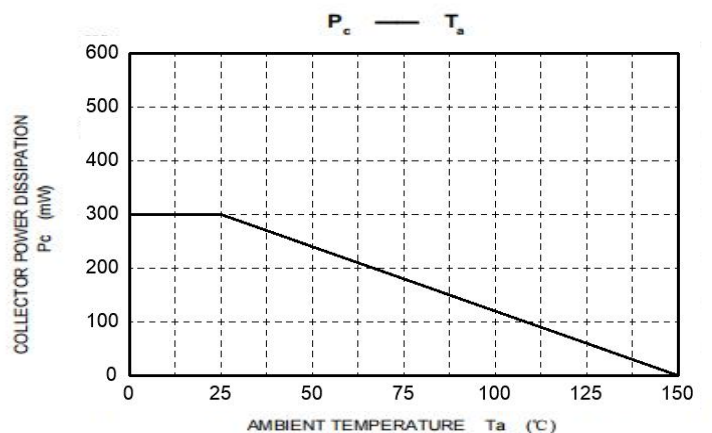
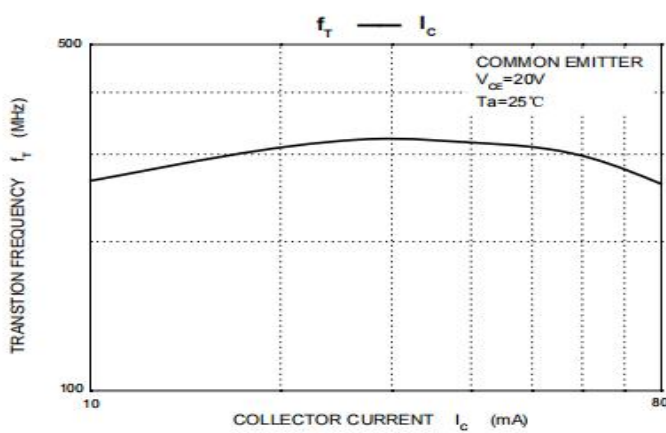
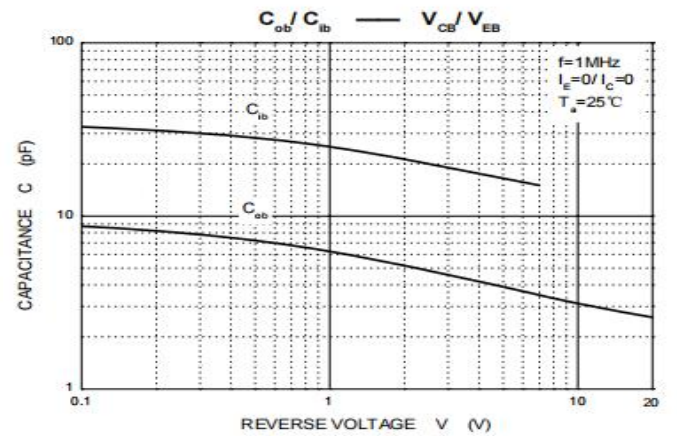
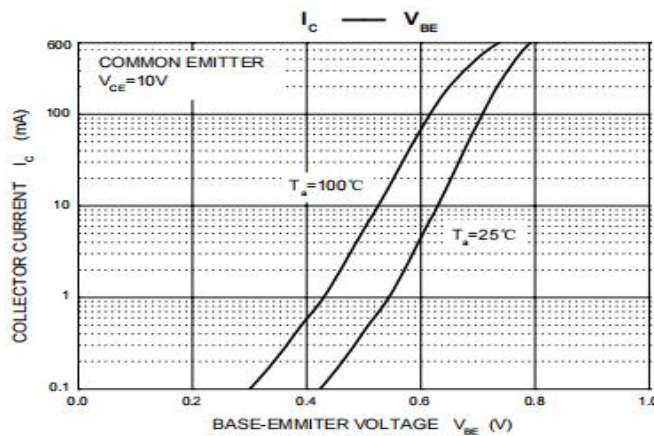
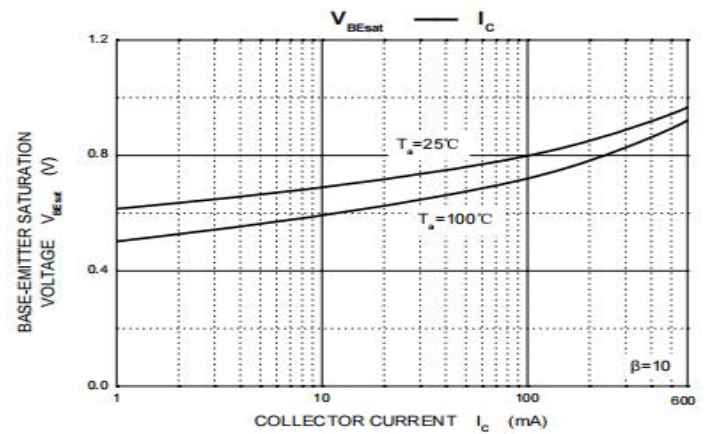
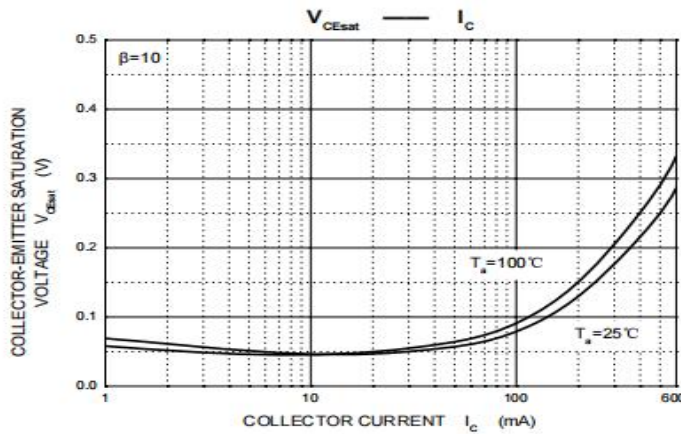
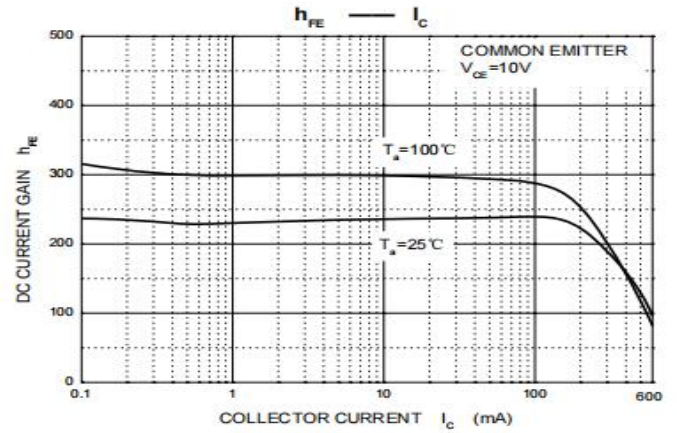
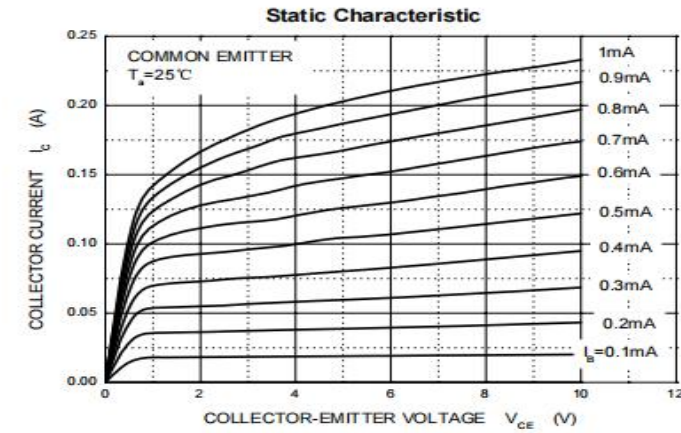
Electrical Characteristics (T=25°C unless otherwise noted)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	75		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_{CBO}	$V_{CB}=60V, I_E=0$		10	nA
Collector cut-off current	I_{CEX}	$V_{CE}=30V, V_{BE(off)}=3V$		10	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=3V, I_C=0$		100	nA
DC current gain	$h_{FE(1)}$	$V_{CE}=10V, I_C=150mA$	100	300	
	$h_{FE(2)}$	$V_{CE}=10V, I_C=0.1mA$	40		
	$h_{FE(3)}$	$V_{CE}=10V, I_C=500mA$	42		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500mA, I_B=50mA$		1	V
		$I_C=150mA, I_B=15mA$		0.3	V
Base -emitter saturation voltage	$V_{BE(sat)}$	$I_C=500mA, I_B=50mA$		2.0	V
		$I_C=150mA, I_B=15mA$		1.2	V
Transition frequency	f_T	$V_{CE}=20V, I_C=20mA, f=100MHz$	300		MHz
Delay time	t_d	$V_{CC}=30V, V_{BE(off)}=0.5V$ $I_C=150mA, I_{B1}=15mA$		10	ns
Rise time	t_r			25	ns
Storage time	t_s	$V_{CC}=30V, I_C=150mA,$ $I_{B1}=I_{B2}=15mA$		225	ns
Fall time	t_f			60	ns

* Pulse Test : pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

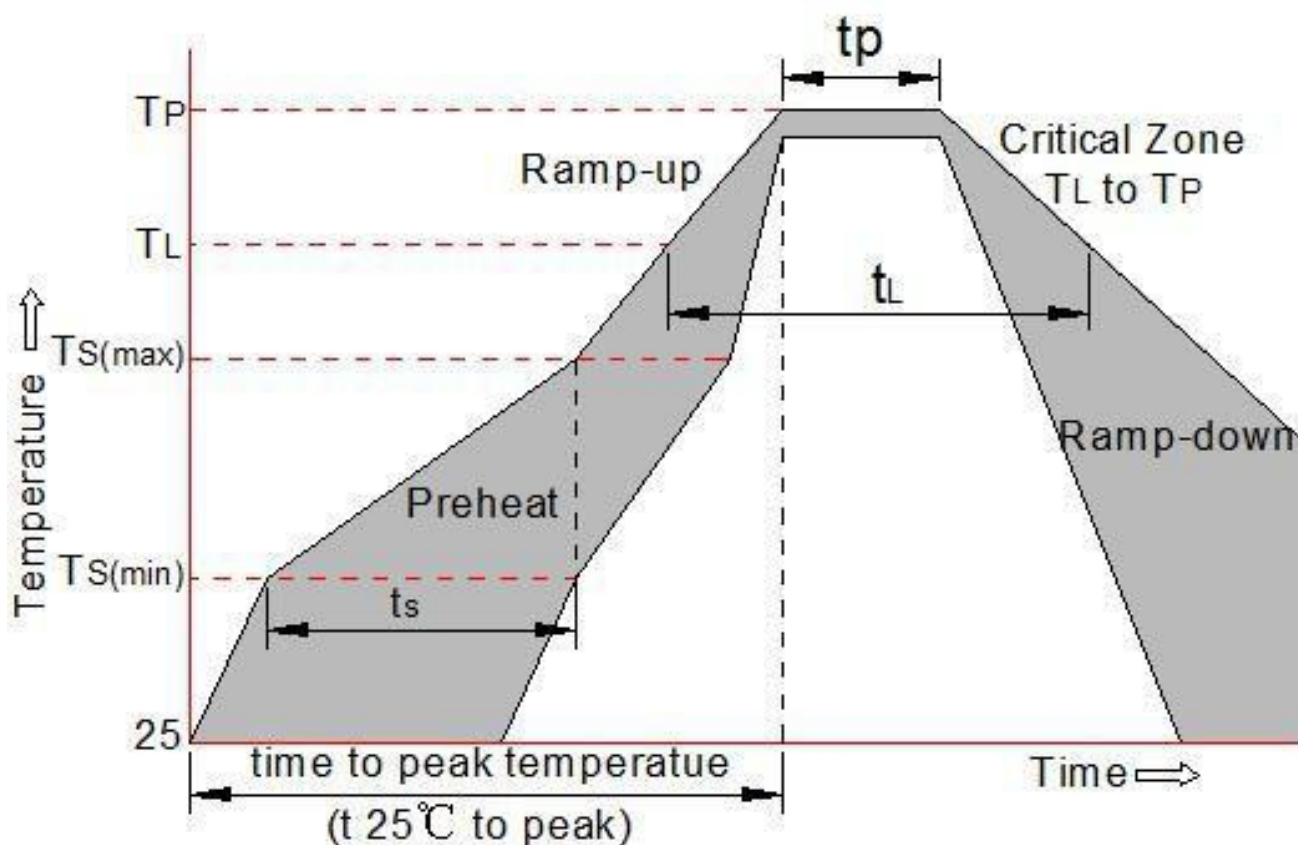


Typical Characteristics

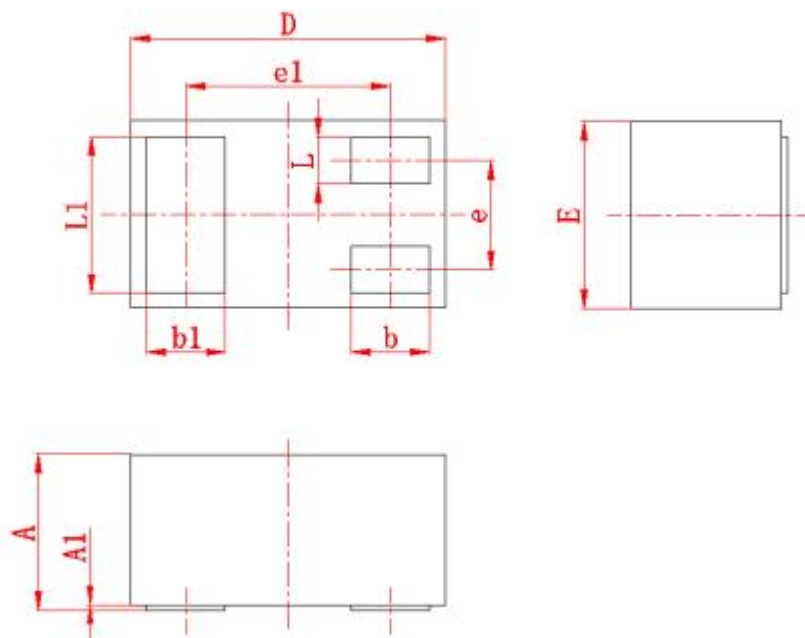


Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	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

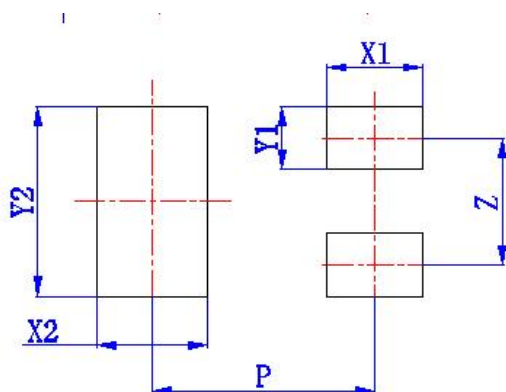


Package mechanical data



Symbol	Millimeters	
	min	max
A	0.4	0.5
A1	0	0.05
D	0.9	1.1
E	0.55	0.65
e	(0.35)	
e1	(0.65)	
b	0.2	0.3
b1	0.2	0.3
L	0.1	0.2
L1	0.45	0.55

Suggested Land Pattern



Symbol	Dimension in Millimeters
	typ
X1	(0.3)
X2	(0.35)
Y1	(0.2)
Y2	(0.6)
Z	(0.4)
P	(0.7)