

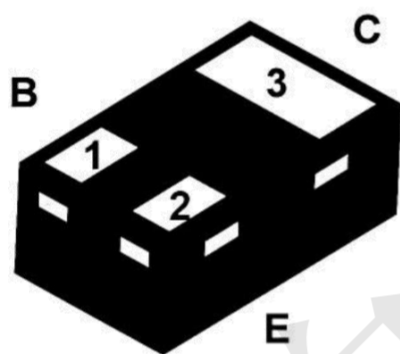
Product Summary

- $BVCBO \geq -40V(I_C = -10\mu A)$
- $BVCEO \geq -40V(I_C = -1mA)$
- $I_C = -200mA$

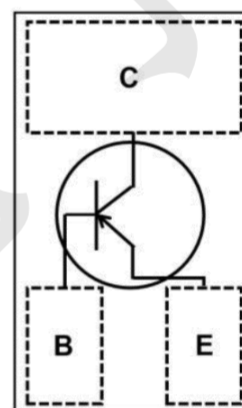
Features

- Consumer electronics
- Voltage switching
- High DC Current Gain

Circuit diagram and pin information



DFN1006-3



Schematic Diagram

Absolute Maximum Ratings

($T_A = 25^\circ C$ unless otherwise specified)

PARAMETER	SYMBOL	LIMIT	UNIT
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-40	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current (DC)	I_C	-200	mA
Power Total Dissipation @ $T_A = 25^\circ C$	P_D	100	mW
Maximum Operating Junction Temperature	T_J	+150	$^\circ C$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ C$
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	1250	$^\circ C/W$

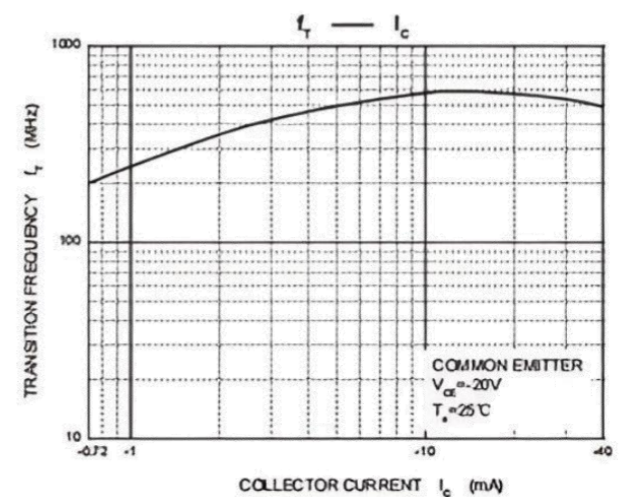
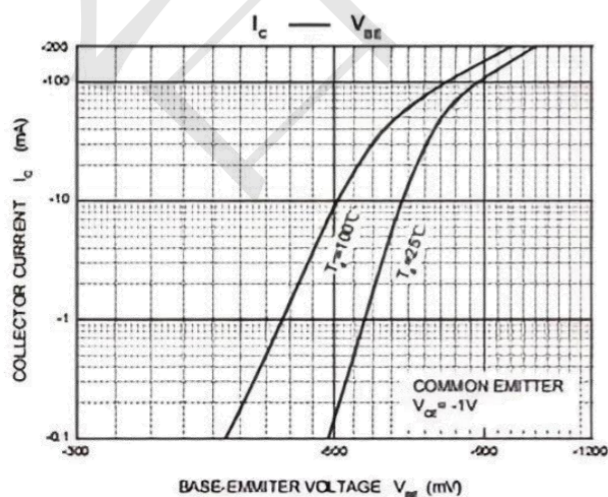
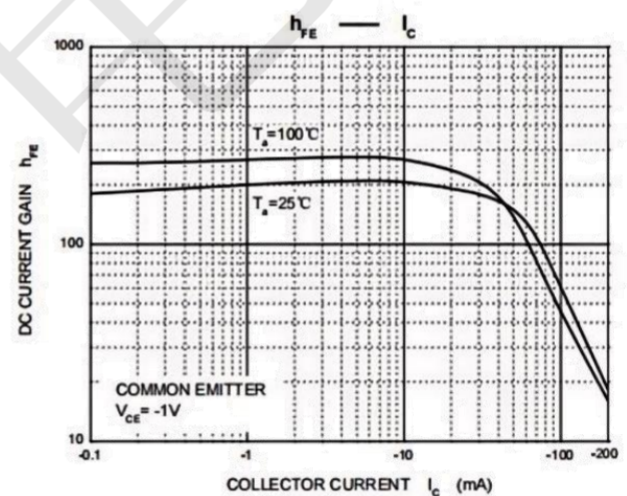
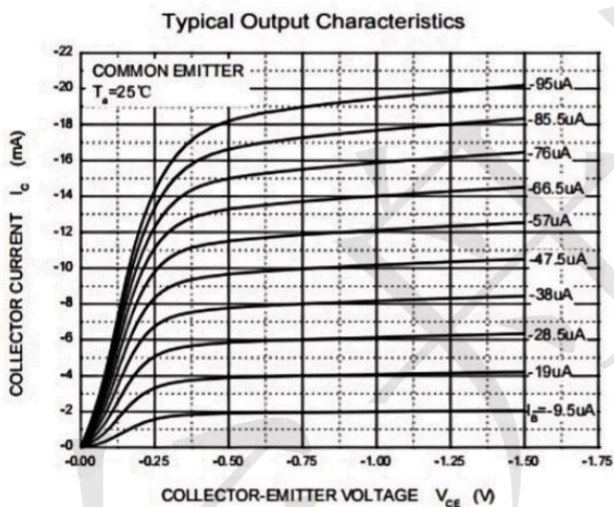
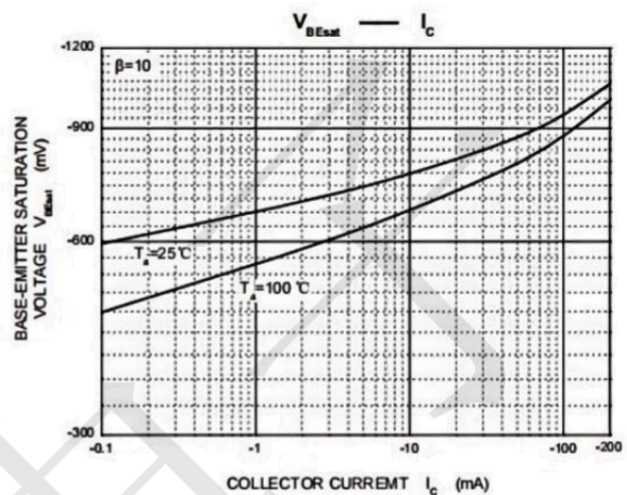
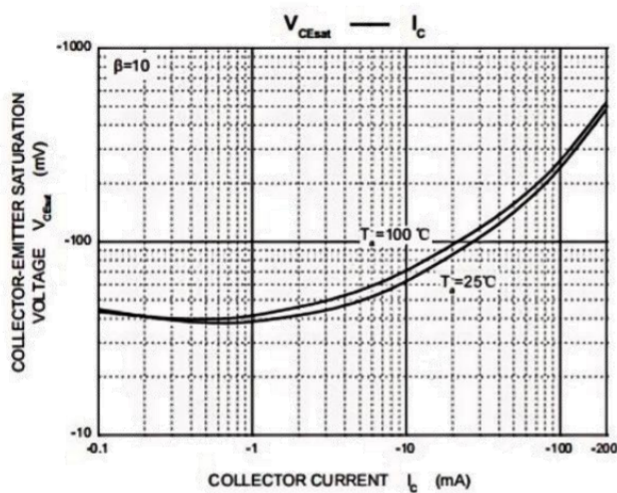
Note :Repetitive Rating: Pulse width limited by maximum junction temperature

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

Parameter	Symbol	Conditions	Min	Max	Units
Collector-base Breakdown Voltage	$V_{BR(CBO)}$	$I_C = -10\mu A, I_E = 0$	-40	--	V
Collector-emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, I_B = 0$	-40	--	V
Emitter-base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-5	--	V
Collector Cut-off Current	I_{CEX}	$V_{CE} = -30V, V_{EB(off)} = -3V$	--	-50	nA
Emitter Cut-off Current	I_{EBO}	$I_C = 0, V_{EB} = -5V$	--	-100	nA
DC current gain	$H_{FE(1)}$	$V_{CE} = -1V, I_C = -0.1mA$	60	--	
	$H_{FE(2)}$	$V_{CE} = -1V, I_C = -1mA$	80	--	
	$H_{FE(3)}$	$V_{CE} = -1V, I_C = -10mA$	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	$V_{CE(sat)1}$	$I_C = -10mA, I_B = -1mA$	--	-0.25	V
	$V_{CE(sat)2}$	$I_C = -50mA, I_B = -5mA$	--	-0.4	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	$I_C = -10mA, V_{CE} = 20V;$ $f = 100MHz$	250	--	MHz
Collector Output Capacitance	C_{ob}	$I_E = 0, V_{CB} = -5V, f = 1MHz$	--	4.5	pF
Base Input Capacitance	C_{ib}	$I_E = 0, V_{EB} = 0.5V, f = 1MHz$	--	10	pF
Noise Figure	NF	$I_E = -0.1mA, V_{CE} = -5V,$ $R_G = 1K\Omega, f = 1Hz$	--	4	dB
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	$V_{CC} = -3V, I_C = -10mA,$ $I_{B1} = I_{B2} = -1mA$	--	225	ns
Fall Time	t_f		--	75	ns

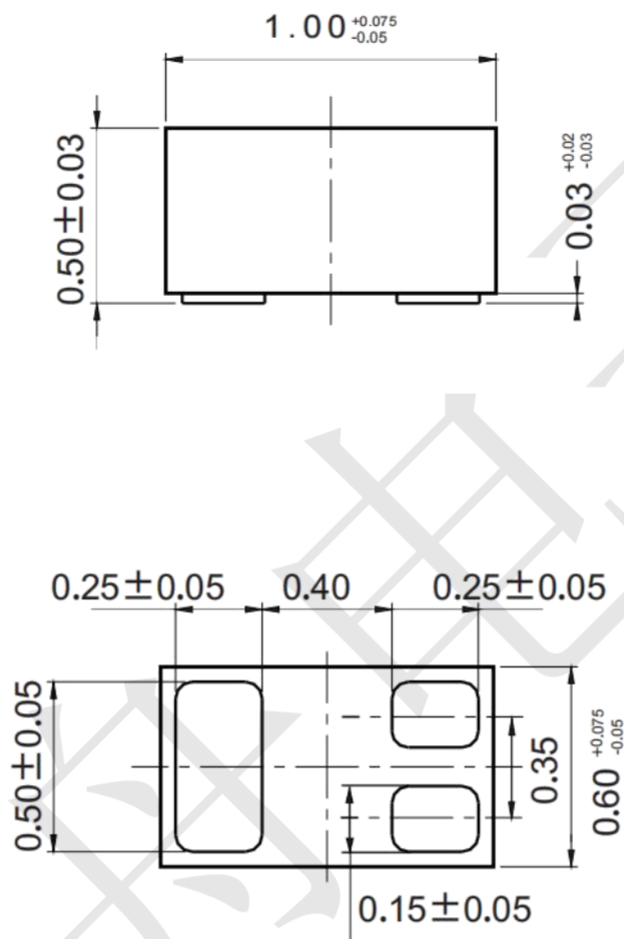
Note :Repetitive Rating: Pulse width limited by maximum junction temperature

Typical Performance Characteristics (TA=25°C)



Package Outline Dimensions (unit: mm)

DFN1006-3



Mounting Pad Layout (unit: mm)

