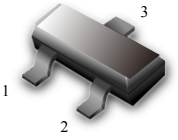
General Purpose Transistors

NPN Silicon

● We declare that the material of product compliance with RoHS requirements.

● Absolute maximum ratings (Ta=25℃)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	60	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	7	V
Collector current	I_C	0.15	A
Collector power dissipation	P_C	0.15	W
Junction temperature	Tj	150	C
Storage temperature	Tstg	−55~+150	C



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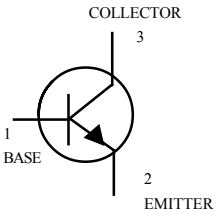

● Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	60	–	–	V	I_C=50μA
Collector-emitter breakdown voltage	BV_{CEO}	50	–	–	V	I_C=1μA
Emitter-base breakdown voltage	BV_{EBO}	7	–	–	V	I_E=50μA
Collector cutoff current	I_{CBO}	–	–	0.1	μA	V_{CB}=60V
Emitter cutoff current	I_{EBO}	–	–	0.1	μA	V_{EB}=7V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–	0.5	V	I_C/I_B=50mA/5mA
DC current transfer ratio	h_{FE}	120	–	560	–	V_{CE}=6V, I_C=1mA
Transition frequency	f_T	–	180	–	MHz	V_{CE}=12V, I_E=2mA, f=30MHz
Output capacitance	Cob	–	2.0	3.5	pF	V_{CB}=12V, I_E=0A, f=1MHz

● Device marking

FTC4617QT1=BQ FTC4617RT1=BR FTC4617ST1=BS

● h_{FE} values are classified as follows :

Item	Q	R	S
h_{FE}	120~270	180~390	270~560

ORDERING INFORMATION

Device	Marking	Shipping
FTC4617QT1	BQ	3000 Tape & Reel
FTC4617QT3	BQ	10000 Tape & Reel
FTC4617RT1	BR	3000 Tape & Reel
FTC4617RT3	BR	10000 Tape & Reel
FTC4617ST1	BS	3000 Tape & Reel
FTC4617ST3	BS	10000 Tape & Reel

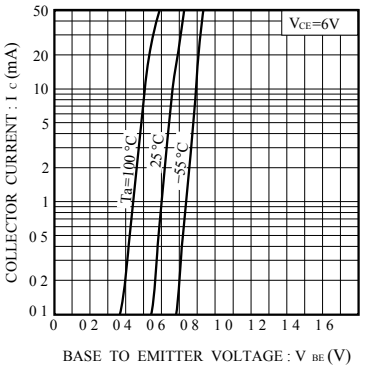

Fig.1 Grounded emitter propagation characteristics

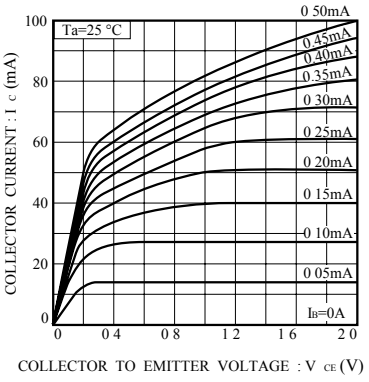

Fig.2 Grounded emitter output characteristics (I)

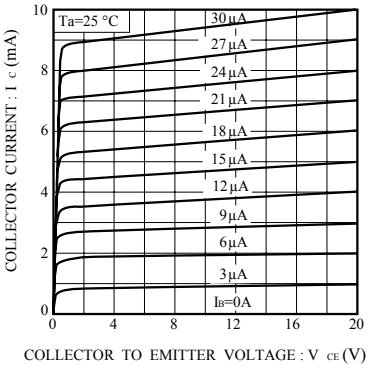

Fig.3 Grounded emitter output characteristics (II)

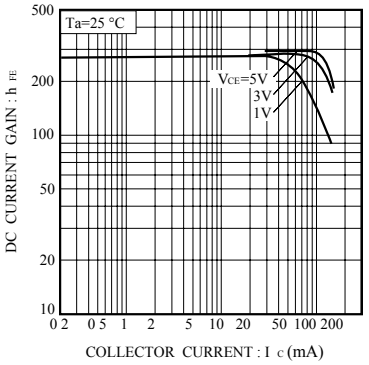

Fig.4 DC current gain vs. collector current (I)

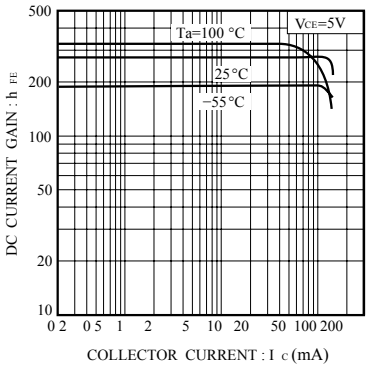

Fig.5 DC current gain vs. collector current (II)

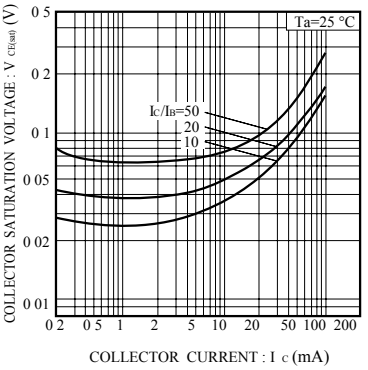

Fig. 6 Collector-emitter saturation voltage vs. collector current

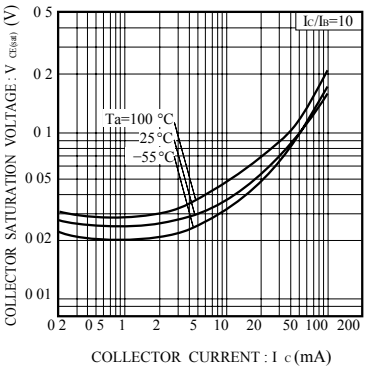

Fig.7 Collector-emitter saturation voltage vs. collector current (I)

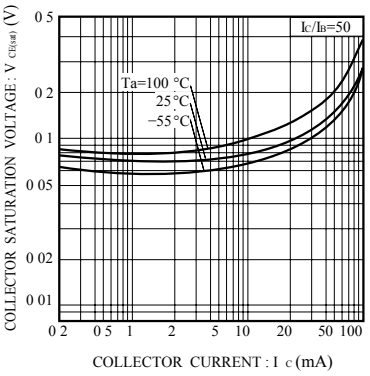

Fig.8 Collector-emitter saturation voltage vs. collector current (II)

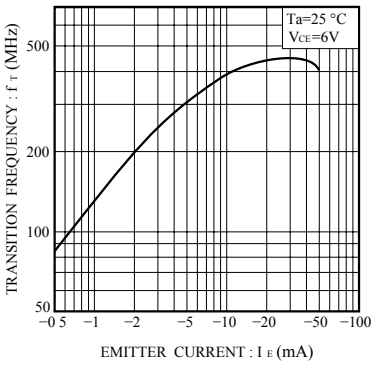

Fig.9 Gain bandwidth product vs. emitter current

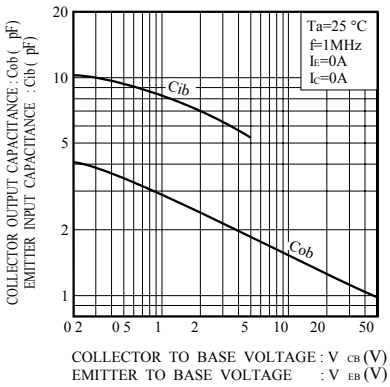

Fig.10 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

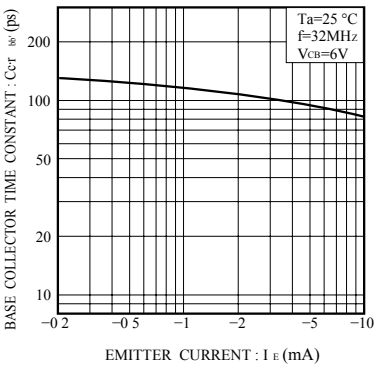

Fig.11 Base-collector time constant vs. emitter current

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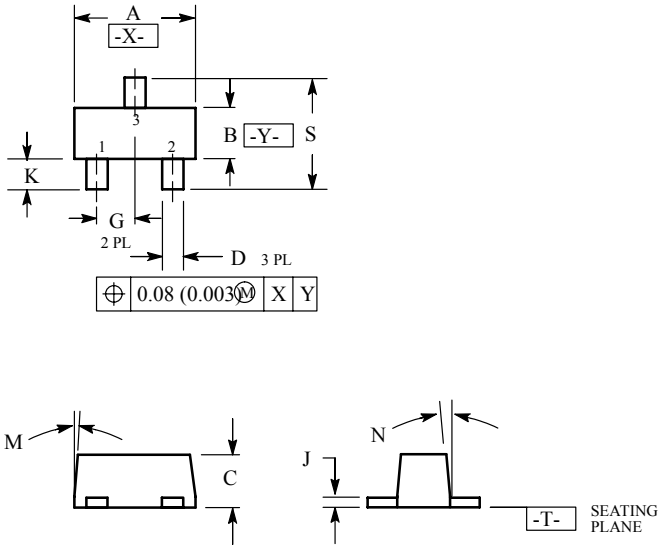
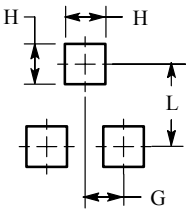


NOTES:
1 DIMENSIONING AND TOLERANCING PER ANSI Y14 5M, 1982
2 CONTROLLING DIMENSION: MILLIMETERS
3 MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL
4 463C-01 OBSOLETE, NEW STANDARD 463C-02

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	1 50	1 60	1 70	0 059	0 063	0 067
B	0 75	0 85	0 95	0 030	0 034	0 040
C	0 60	0 70	0 80	0 024	0 028	0 031
D	0 23	0 28	0 33	0 009	0 011	0 013
G		0 50 BSC			0 020 BSC	
H		0 53 REF			0 021 REF	
J	0 10	0 15	0 20	0 004	0 006	0 008
K	0 30	0 40	0 50	0 012	0 016	0 020
L		1 10 REF			0 043 REF	
M	----	----	10°	----	----	10°
N	----	----	10°	----	----	10°
S	1 50	1 60	1 70	0 059	0 063	0 067



RECOMMENDED PATTERN
OF SOLDER PADS