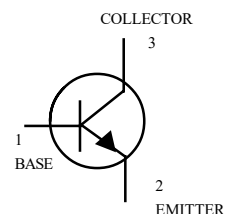
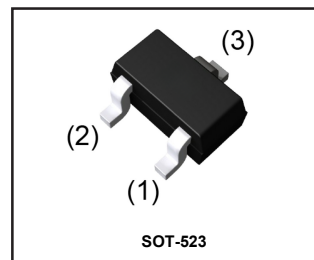


General Purpose Transistors

NPN Silicon

- We declare that the material of product compliance with RoHS requirements.
- AEC-Q101 qualified
- Absolute maximum ratings ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CB0}	60	V
Collector-emitter voltage	V_{CE0}	50	V
Emitter-base voltage	V_{EB0}	7	V
Collector current	I_C	0.15	A
Collector power dissipation	P_C	0.15	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55~+150	°C



- Electrical characteristics ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CB0}	60	—	—	V	$I_C=50\mu\text{A}$
Collector-emitter breakdown voltage	BV_{CE0}	50	—	—	V	$I_C=1\mu\text{A}$
Emitter-base breakdown voltage	BV_{EB0}	7	—	—	V	$I_E=50\mu\text{A}$
Collector cutoff current	I_{CBO}	—	—	0.1	μA	$V_{CB}=60\text{V}$
Emitter cutoff current	I_{EBO}	—	—	0.1	μA	$V_{EB}=7\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.5	V	$I_C/I_B=50\text{mA}/5\text{mA}$
DC current transfer ratio	h_{FE}	120	—	560	—	$V_{CE}=6\text{V}, I_C=1\text{mA}$
Transition frequency	f_T	—	180	—	MHz	$V_{CE}=12\text{V}, I_E=2\text{mA}, f=30\text{MHz}$
Output capacitance	C_{ob}	—	2.0	3.5	pF	$V_{CB}=12\text{V}, I_E=0\text{A}, f=1\text{MHz}$

- Device marking

FTC4617E-Q=BQ FTC4617E-R=BR FTC4617E-S=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
FTC4617E-Q	BQ	3000 Tape & Reel
FTC4617E-R	BR	3000 Tape & Reel
FTC4617E-S	BS	3000 Tape & Reel

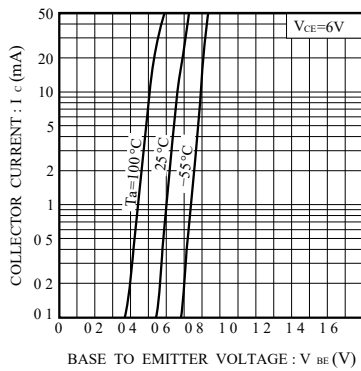


Fig.1 Grounded emitter propagation characteristics

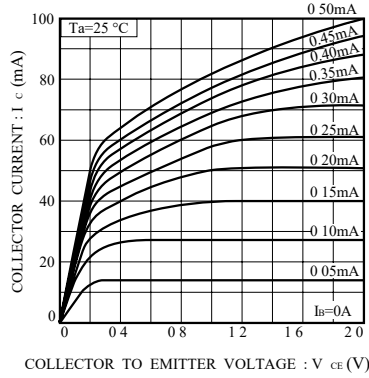


Fig.2 Grounded emitter output characteristics (I)

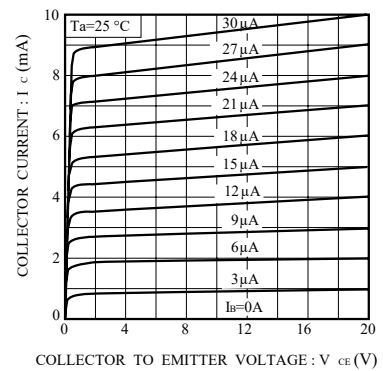


Fig.3 Grounded emitter output characteristics (II)

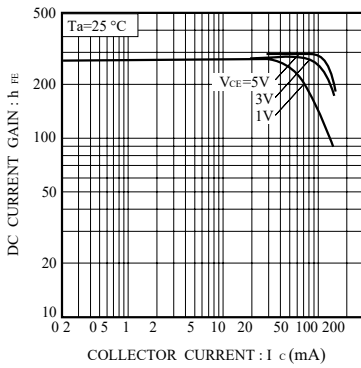


Fig.4 DC current gain vs. collector current (I)

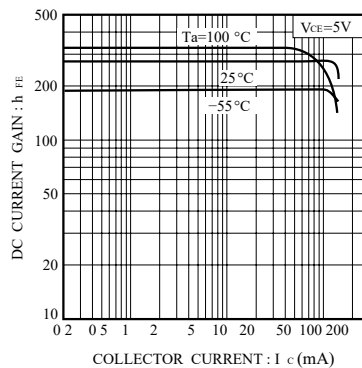


Fig.5 DC current gain vs. collector current (II)

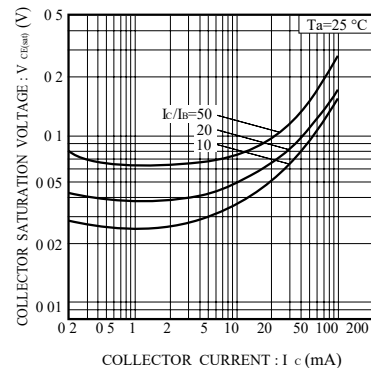


Fig.6 Collector-emitter saturation voltage vs. collector current

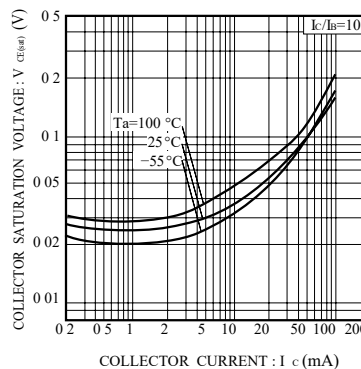


Fig.7 Collector-emitter saturation voltage vs. collector current (I)

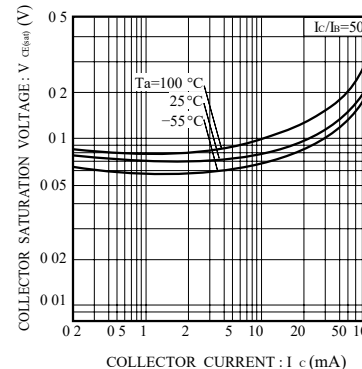


Fig.8 Collector-emitter saturation voltage vs. collector current (II)

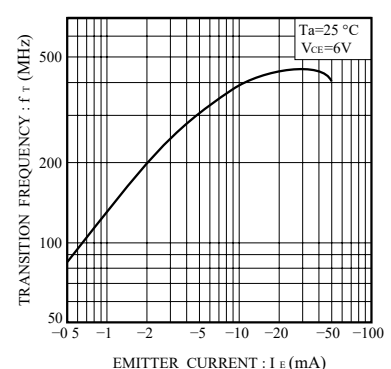


Fig.9 Gain bandwidth product vs. emitter current

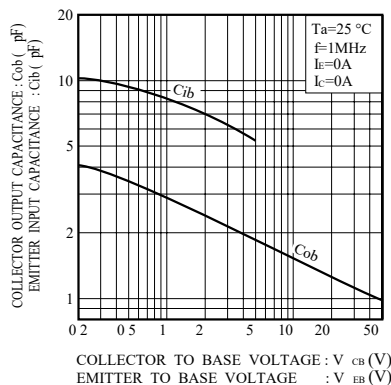


Fig.10 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

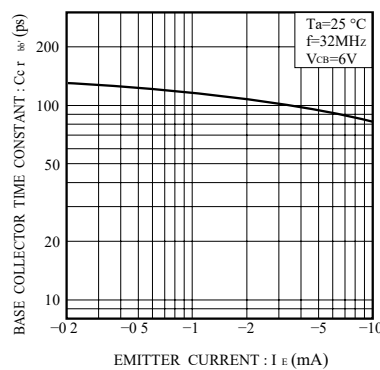
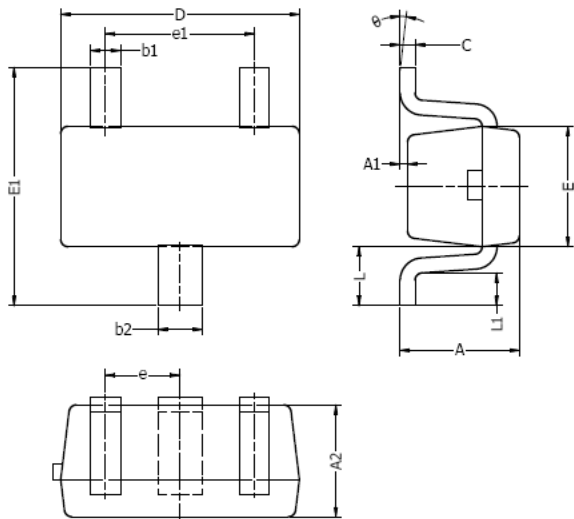
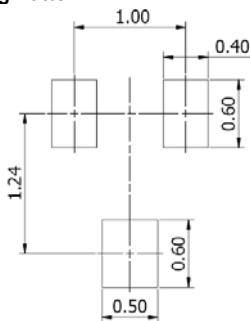


Fig.11 Base-collector time constant vs. emitter current

SOT-523 Package Outline



Typical Soldering Pattern:



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.70	0.90	0.028	0.035
A1	0.00	0.10	0.000	0.004
A2	0.70	0.80	0.028	0.031
b1	0.15	0.25	0.006	0.010
b2	0.25	0.35	0.010	0.014
c	0.10	0.20	0.004	0.008
D	1.50	1.70	0.059	0.067
E	0.70	0.90	0.028	0.035
E1	1.45	1.75	0.057	0.069
e	0.50 TYP.		0.020 TYP.	
e1	0.90	1.10	0.035	0.043
L	0.40 REF.		0.016 REF.	
L1	0.10	0.30	0.004	0.012
θ	0°	8°	0°	8°

- NOTES:
1. Above package outline conforms to JEITA EAIJ ED-7500A SC-75A.
 2. Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.