NPN general purpose transistor

SSTA28 / MMSTA28

●Features

1) BV_{CES} < 80V (I_C=100μA)

●Package, marking and packaging specifications

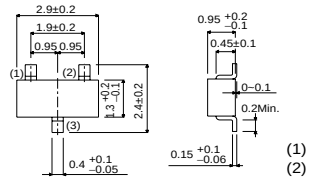
Part No.	SSTA28	MMSTA28
Packaging type	SST3	SMT3
Marking	RAT	RAT
Code	T116	T146
Basic ordering unit (pieces)	3000	3000

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	80	V
Collector-emitter voltage	V_{CEO}	80	V
Emitter-base voltage	V_{EBO}	12	V
Collector current	I_C	0.3	A
Collector power dissipation	P_C	0.2	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

●External dimensions (Unit : mm)

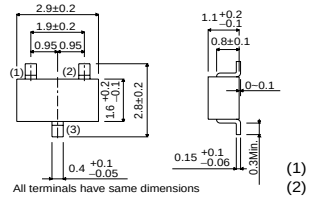
SSTA28
SOT-23



ROHM : SST3
JEDEC : SOT-23
All terminals have same dimensions

(1) Emitter
(2) Base
(3) Collector

MMSTA28



ROHM : SMT3
EIAJ : SC-59
JEDEC : SOT-346
All terminals have same dimensions

(1) Emitter
(2) Base
(3) Collector

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	80	–	–	V	I_C = 100μA
Collector-emitter breakdown voltage	BV_{CES}	80	–	–	V	I_C = 100μA
Emitter-base breakdown voltage	BV_{EBO}	12	–	–	V	I_E = 10μA
Collector cutoff current	I_{CBO}	–	–	0.1	μA	V_{CB} = 60V
	I_{EBO}	–	–	0.1	μA	V_{EB} = 10V
	I_{CES}	–	–	0.5	μA	V_{CE} = 10V
Collector-emitter saturation voltage	$V_{CE(sat)}$ 1	–	0.7	1.2	V	I_C/I_B = 10mA/10μA
	$V_{CE(sat)}$ 2	–	0.8	1.5	V	I_C/I_B = 100mA/0.1mA
Base-emitter saturation voltage	$V_{BE(on)}$	–	1.4	2.0	V	V_{CE}/I_B = 5V/100mA
DC current transfer ratio	h_{FE}	10000	–	–	–	V_{CE} = 5V , I_C = 10mA
		10000	–	–		V_{CE} = 5V , I_C = 100mA
Transition frequency	f_T	125	200	–	MHz	V_{CE} = 5V , I_E = 10mA , f = 100MHz
Output Capecitance	Cob	–	5.0	8.0	pF	V_{CB} = 10V , I_E = 0 , f = 1MHz

●**Electrical characteristic curves**

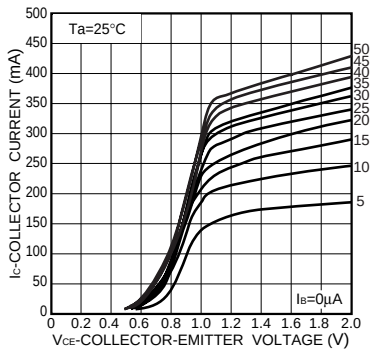


Fig.1 Grounded emitter output characteristics

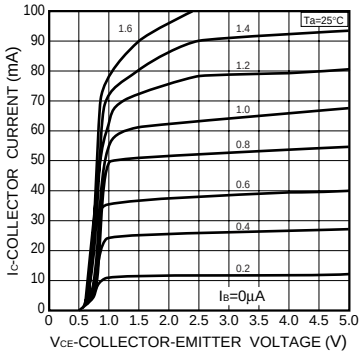


Fig.2 Typical output characteristics

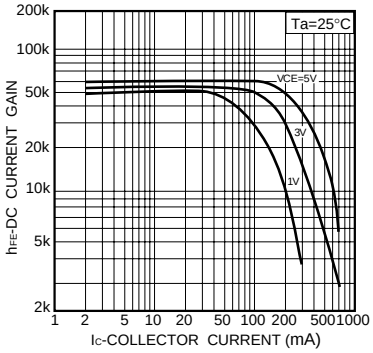


Fig.3 DC current gain vs. collector current (II)

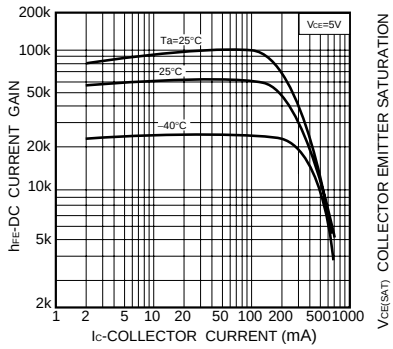


Fig.4 DC current gain vs. collector current

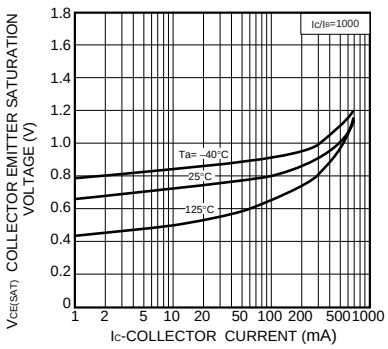


Fig.5 Collecor emitter saturation voltage vs collector current

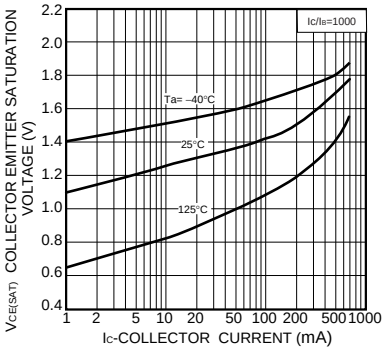


Fig.6 Base emitter saturation voltage vs collector current

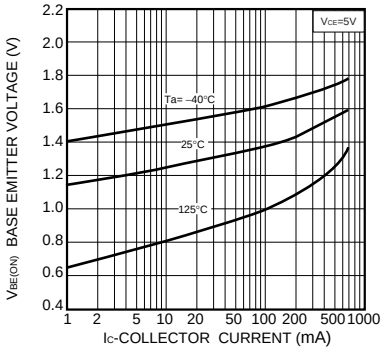


Fig.7 Base emitter "ON" voltage vs collector current

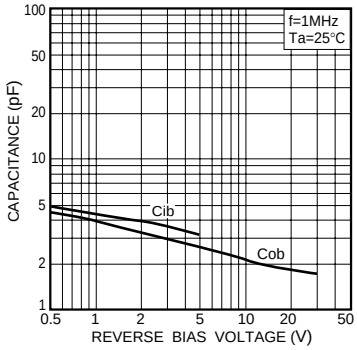


Fig.8 Capacitance vs reverse bias voltage

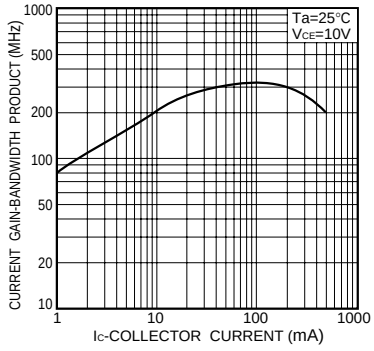


Fig.9 Current gain-bandwdth product vs collector current

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