

# NPN general purpose transistor

## SSTA28 / MMSTA28

### ●Features

1)  $BV_{CES} < 80V$  ( $I_C=100\mu A$ )

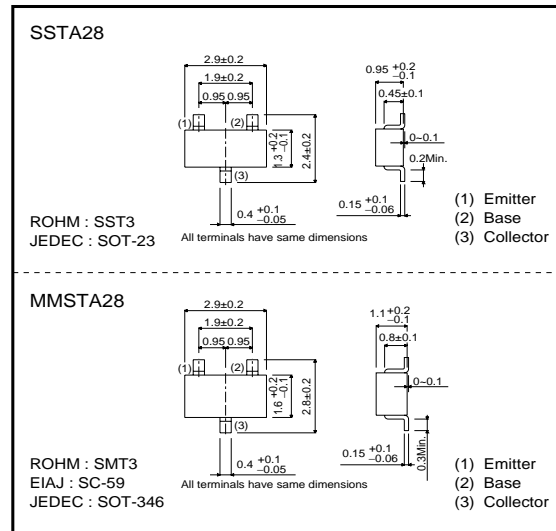
### ●Package, marking and packaging specifications

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

### ●Absolute maximum ratings ( $T_a=25^\circ C$ )

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	$T_J$	150	$^\circ C$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ C$

### ●External dimensions (Unit : mm)



### ●Electrical characteristics ( $T_a=25^\circ C$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CBO}$	80	—	—	V	$I_C = 100\mu A$
Collector-emitter breakdown voltage	$BV_{CES}$	80	—	—	V	$I_C = 100\mu A$
Emitter-base breakdown voltage	$BV_{EBO}$	12	—	—	V	$I_E = 10\mu A$
Collector cutoff current	$I_{CBO}$	—	—	0.1	$\mu A$	$V_{CB} = 60V$
	$I_{EBO}$	—	—	0.1	$\mu A$	$V_{EB} = 10V$
	$I_{CES}$	—	—	0.5	$\mu A$	$V_{CE} = 10V$
Collector-emitter saturation voltage	$V_{CE(sat)1}$	—	0.7	1.2	V	$I_C/I_B = 10mA/10\mu A$
	$V_{CE(sat)2}$	—	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 Capacitance	$C_{ob}$	—	5.0	8.0	pF	$V_{CB} = 10V, I_E = 0, f = 1MHz$

Transistors

●Electrical characteristic curves

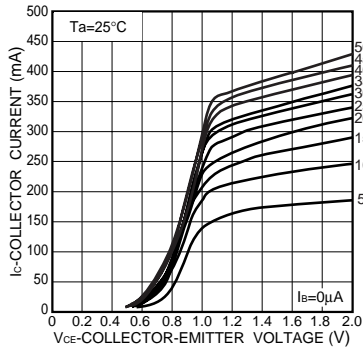


Fig.1 Grounded emitter output characteristics

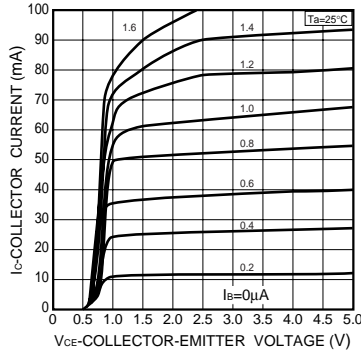


Fig.2 Typical output characteristics

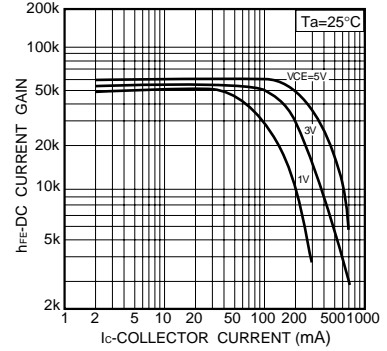


Fig.3 DC current gain vs. collector current ( II )

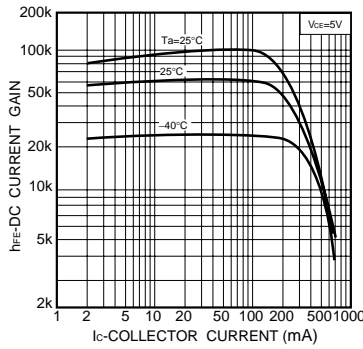


Fig.4 DC current gain vs. collector current

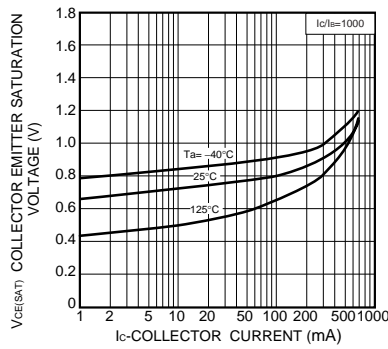


Fig.5 Collector emitter saturation voltage vs collector current

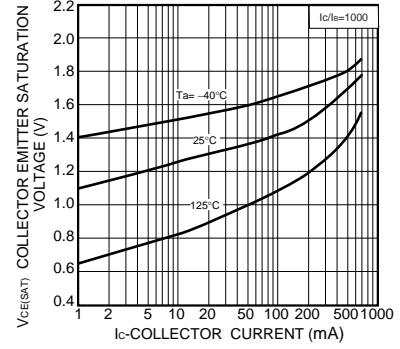


Fig.6 Base emitter saturation voltage vs collector current

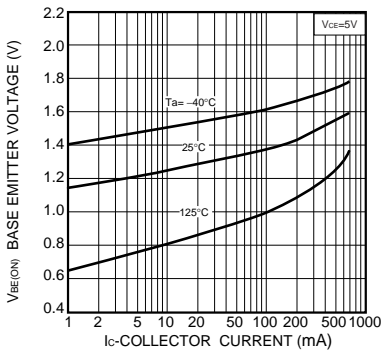


Fig.7 Base emitter "ON" voltage vs collector current

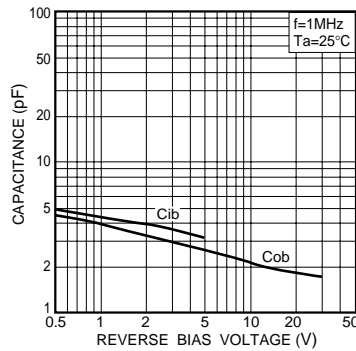


Fig.8 Capacitance vs reverse bias voltage

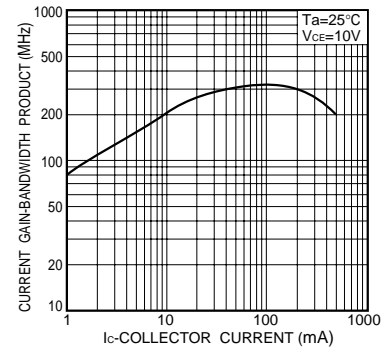


Fig.9 Current gain-bandwidth product vs collector current

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