



Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CBO}$	50	—	70	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	$BV_{CEO}$	50	—	70	V	$I_C=5mA$
Collector cutoff current	$I_{CBO}$	—	—	1.0	$\mu A$	$V_{CB}=40V$
Emitter cutoff current	$I_{EBO}$	—	—	3	mA	$V_{EB}=5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	1.5	V	$I_C/I_B=1A/1mA$ *
DC current transfer ratio	$h_{FE}$	1000	—	10000	—	$V_{CE}=2V, I_C=1A$
Transition frequency	$f_T$	—	80	—	MHz	$V_{CE}=5V, I_E=-0.1A, f=30MHz$
Output capacitance	$C_{ob}$	—	25	—	pF	$V_{CB}=10V, I_E=0A, f=1MHz$

\* Measured using pulse current.

●Electrical characteristics curves

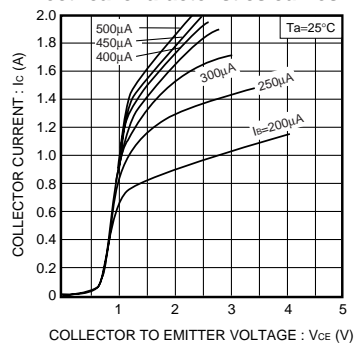


Fig.1 Grounded emitter output characteristics ( I )

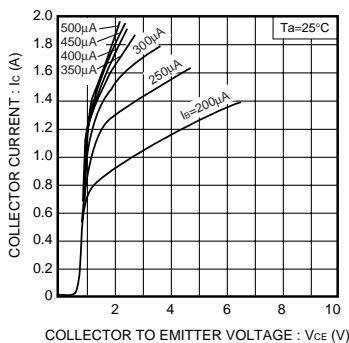


Fig.2 Grounded emitter output characteristics ( II )

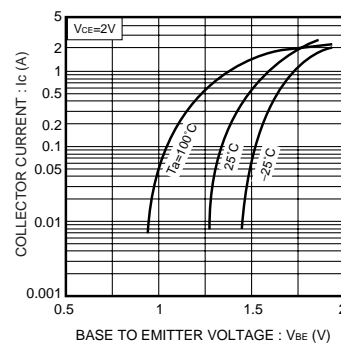


Fig.3 Grounded emitter propagation characteristics

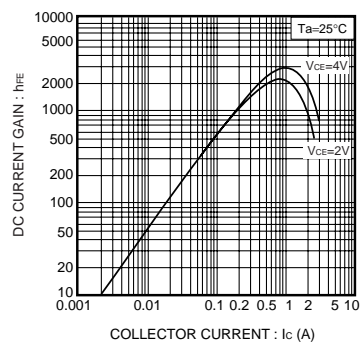


Fig.4 DC current gain vs. collector current ( I )

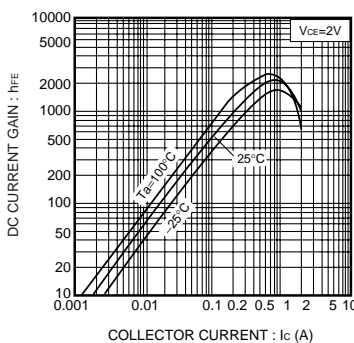


Fig.5 DC current gain vs. collector current ( II )

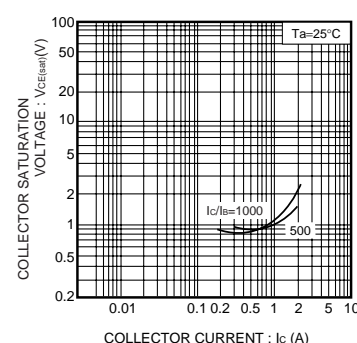


Fig.6 Collector-emitter saturation voltage vs. collector current

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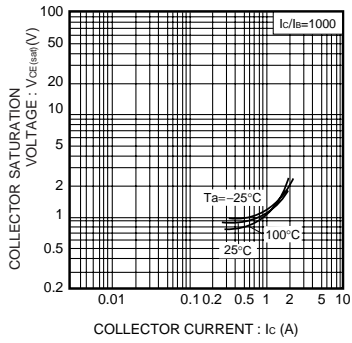


Fig.7 Collector-emitter saturation voltage vs. collector current

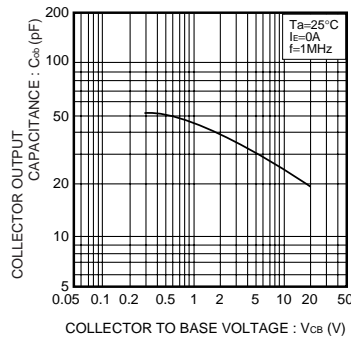


Fig.8 Collector output capacitance vs. collector-base voltage

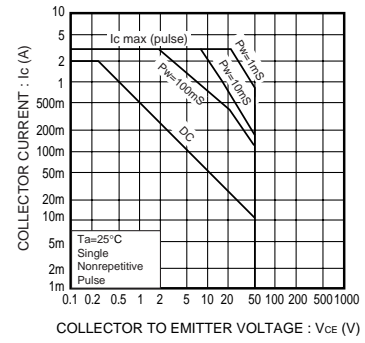


Fig.9 Safe operating area (A. S. O) 2SD2212 (MPT)

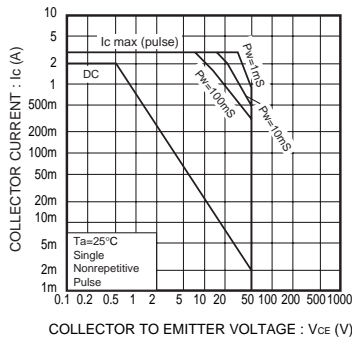


Fig.10 Safe operating area (A. S. O) 2SD2143 (CPT)

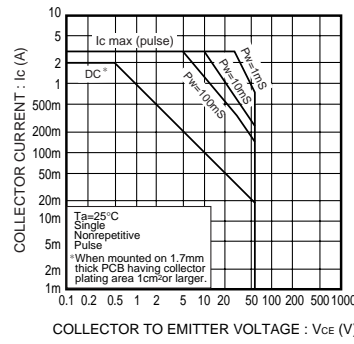


Fig.11 Safe operating area (A. S. O) 2SD1866 (ATV)

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