1.BASE

2.COLLECTOR

3.EMITTER

SOT-89

A42 TRANSISTOR (NPN)

FEATURES

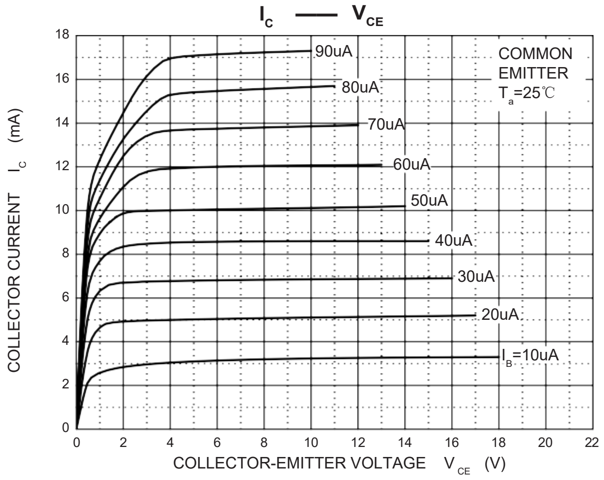
- Low Collector-Emitter Saturation Voltage
- High Breakdown Voltage

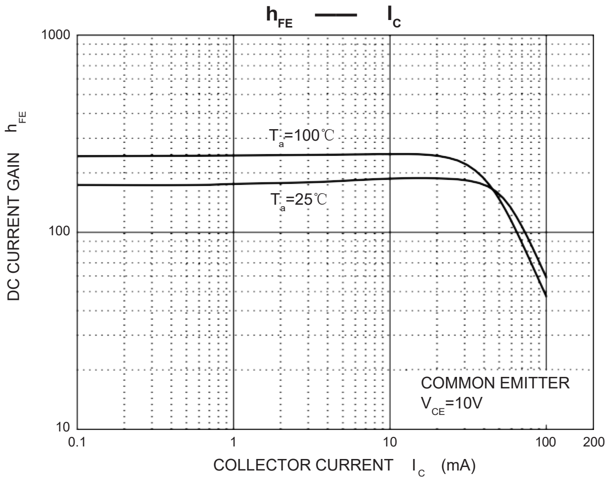
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

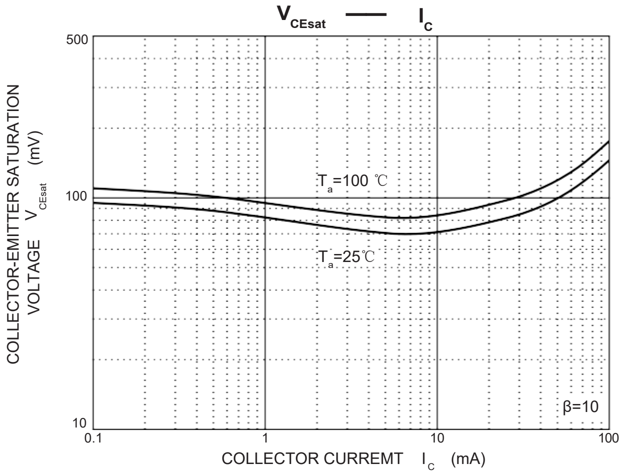
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	310	V
V_{CEO}	Collector-Emitter Voltage	305	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	200	mA
I_{CM}	Collector Current -Pulsed	500	mA
P_C	Collector Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	250	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

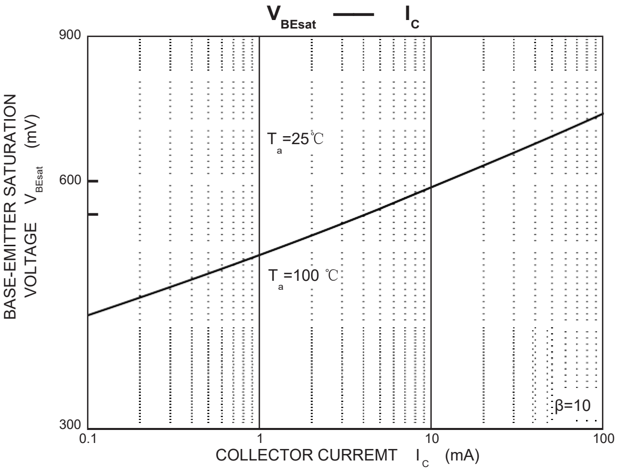
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

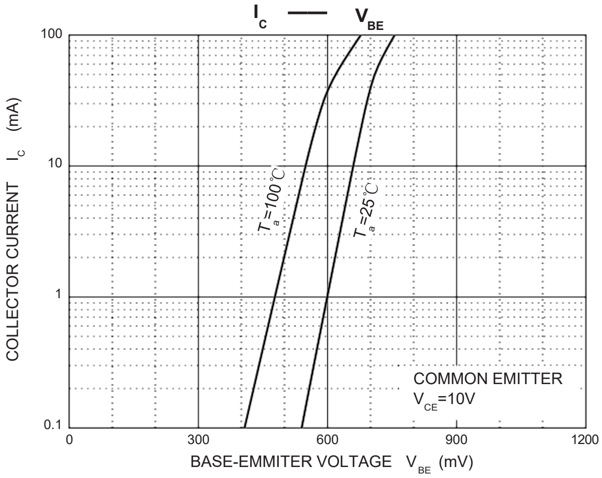
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA,I_E=0	310			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA,I_B=0	305			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA,I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=200V,I_E=0			0.25	μA
	I_{CEX}	V_{CE}=100V,V_X=5V			5	μA
		V_{CE}=300V,V_X=5V			10	μA
Emitter cut-off current	I_{EBO}	V_{EB}=5V,I_C=0			0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=10V, I_C=1mA	60			
	$h_{FE(2)}$	V_{CE}=10V, I_C=10mA	100		300	
	$h_{FE(3)}$	V_{CE}=10V, I_C=30mA	75			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=20mA,I_B=2mA			0.2	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=20mA,I_B=2mA			0.9	V
Transition frequency	f_T	V_{CE}=20V,I_C=10mA, f=30MHz	50			MHz

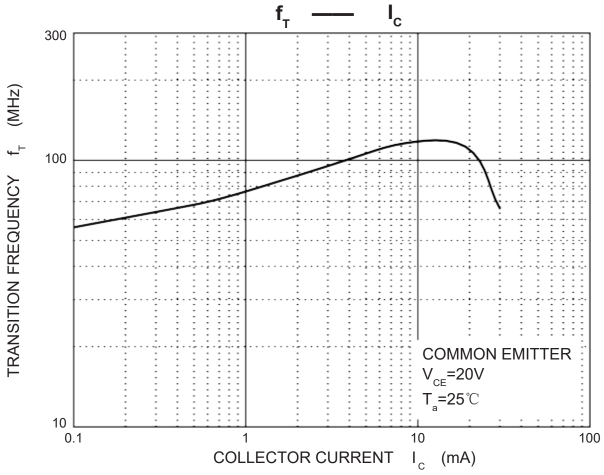

I_C — V_{CE}

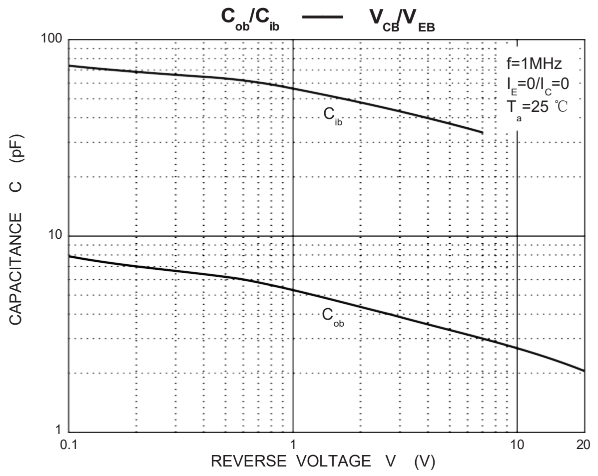

h_{FE} — I_C

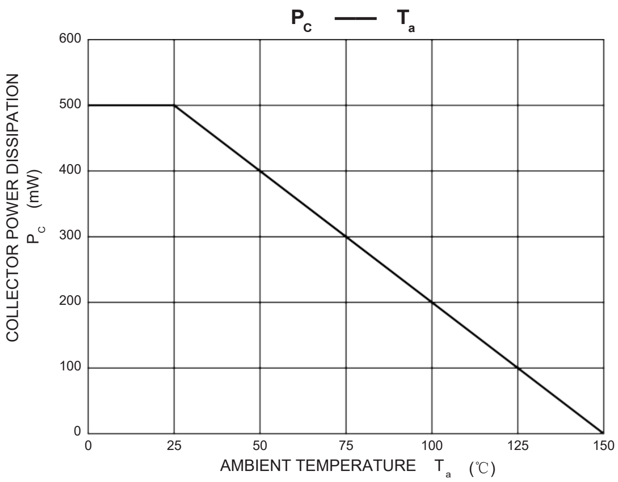

V_{CEsat} — I_C


V_{BEsat} — I_C


I_C — V_{BE}


f_T — I_C


C_{ob}/C_{ib} — V_{CB}/V_{EB}


P_C — T_a