

# 2SC3942

## Silicon NPN triple diffusion planar type

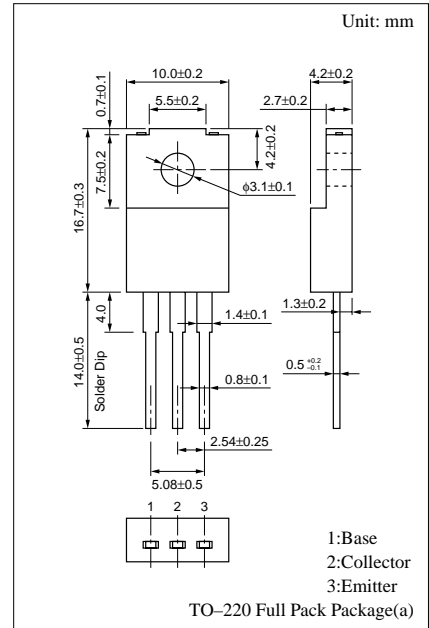
For color TV chroma output

### ■ Features

- High collector to emitter  $V_{CE0}$
- Small collector output capacitance  $C_{ob}$
- Full-pack package which can be installed to the heat sink with one screw

### ■ Absolute Maximum Ratings ( $T_C=25^\circ\text{C}$ )

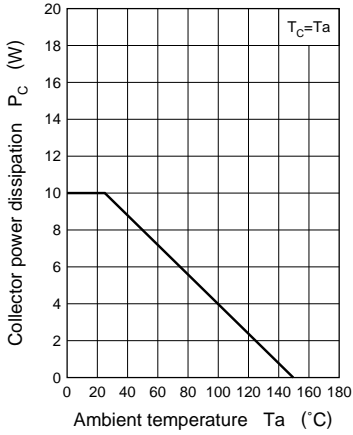
Parameter	Symbol	Ratings	Unit	
Collector to base voltage	$V_{CBO}$	300	V	
Collector to emitter voltage	$V_{CEO}$	300	V	
Emitter to base voltage	$V_{EBO}$	7	V	
Peak collector current	$I_{CP}$	200	mA	
Collector current	$I_C$	100	mA	
Collector power dissipation	$P_C$	$T_C=25^\circ\text{C}$	10	W
		$T_a=25^\circ\text{C}$	2.0	
Junction temperature	$T_j$	150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$	



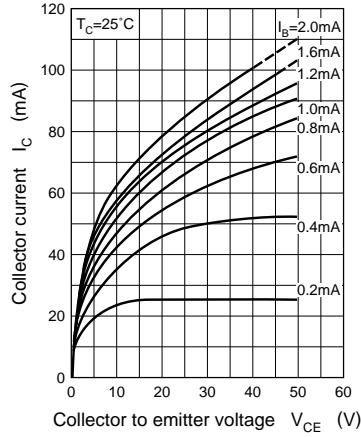
### ■ Electrical Characteristics ( $T_C=25^\circ\text{C}$ )

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CEO}$	$V_{CE} = 200\text{V}, I_B = 0$			10	$\mu\text{A}$
Collector to base voltage	$V_{CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	300			V
Collector to emitter voltage	$V_{CEO}$	$I_C = 1\text{mA}, I_B = 0$	300			V
Emitter to base voltage	$V_{EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	7			V
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 50\text{V}, I_C = 5\text{mA}$	50		250	
Base to emitter voltage	$V_{BE}$	$V_{CE} = 10\text{V}, I_C = 30\text{mA}$			1.2	V
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 30\text{mA}, I_B = 3\text{mA}$			1.5	V
Transition frequency	$f_T$	$V_{CE} = 30\text{V}, I_C = 20\text{mA}, f = 10\text{MHz}$	70	140		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 30\text{V}, I_E = 0, f = 1\text{MHz}$		2.7		pF

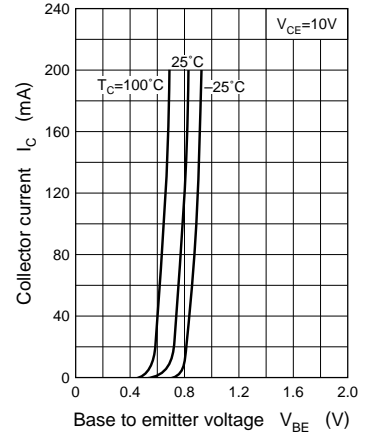
$P_C - T_a$



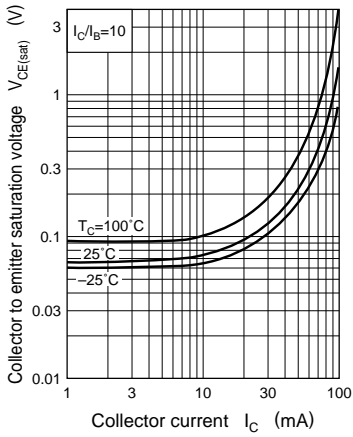
$I_C - V_{CE}$



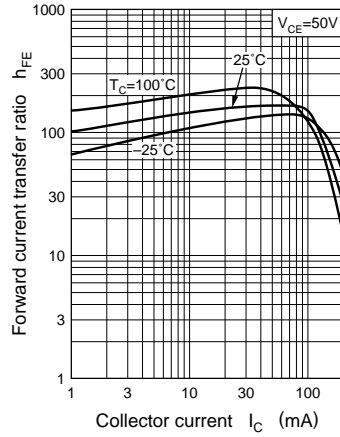
$I_C - V_{BE}$



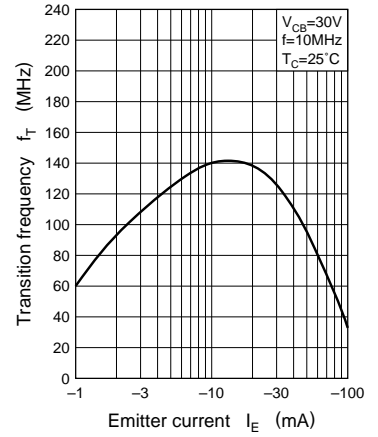
$V_{CE(sat)} - I_C$



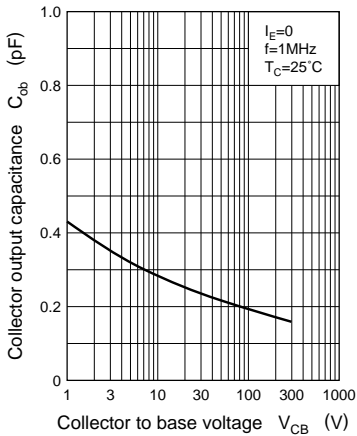
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



Area of safe operation (ASO)

