

## TO-92 Plastic-Encapsulate Transistors

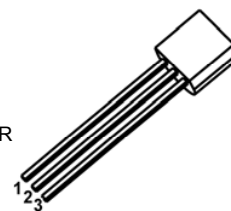
### 2SC3415 TRANSISTOR (NPN)

#### FEATURES

- High Breakdown Voltage
- Low Collector Output Capacitance
- Ideal for Chroma Circuit

TO - 92

1. EMITTER
2. COLLECTOR
3. BASE



#### MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	300	V
$V_{CEO}$	Collector-Emitter Voltage	300	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current	0.1	A
$P_C$	Collector Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	250	$^{\circ}\text{C}/\text{W}$
$T_j$	Junction Temperature	150	$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature	-55~+150	$^{\circ}\text{C}$

#### ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=50\mu\text{A}, I_E=0$	300			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=100\mu\text{A}, I_B=0$	300			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=50\mu\text{A}, I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=200\text{V}, I_E=0$			0.5	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			0.5	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	39		180	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=50\text{mA}, I_B=5\text{mA}$			2	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=50\text{mA}, I_B=5\text{mA}$			1.2	V
Collector output capacitance	$C_{ob}$	$V_{CB}=30\text{V}, I_E=0, f=1\text{MHz}$		3		pF
Transition frequency	$f_T$	$V_{CE}=30\text{V}, I_C=10\text{mA}$		50		MHz

#### CLASSIFICATION OF $h_{FE}$

RANK	M	N	P
RANGE	39-82	56-120	82-180