

## TO-92S Plastic-Encapsulate Transistors

### 2SC2785 TRANSISTOR (NPN)

#### FEATURES

- High voltage
- Excellent  $h_{FE}$  Linearity
- Complementary to 2SA1175 PNP transistor

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

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	60	V
$V_{CEO}$	Collector-Emitter Voltage	50	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current -Continuous	0.1	A
$P_C$	Collector Power Dissipation	0.25	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55-150	$^\circ\text{C}$

#### TO-92S

1. EMITTER
2. COLLECTOR
3. BASE



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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$ , $I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$ , $I_B=0$	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}$ , $I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=60\text{V}$ , $I_E=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5\text{V}$ , $I_C=0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE}=6\text{V}$ , $I_C=1\text{mA}$	110		600	
	$h_{FE(2)}$	$V_{CE}=6\text{V}$ , $I_C=0.1\text{mA}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=100\text{mA}$ , $I_B=10\text{mA}$			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=100\text{mA}$ , $I_B=10\text{mA}$			1	V
Base-emitter voltage	$V_{BE}$	$V_{CE}=6\text{V}$ , $I_C=1\text{mA}$			0.65	V
Transition frequency	$f_T$	$V_{CE}=6\text{V}$ , $I_C=10\text{mA}$	150			MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=6\text{V}$ , $I_E=0$ , $f=1\text{MHz}$			4	pF
Noise figure	NF	$V_{CE}=6\text{V}$ , $I_C=0.1\text{mA}$ , $f=1\text{KHz}$ , $R_g=2\text{K}\Omega$			15	dB

#### CLASSIFICATION OF $h_{FE(1)}$

Rank	RF	JF	HF	FF	EF	KF
Range	110-180	135-220	170-270	200-320	250-400	300-600