## NPN Silicon Epitaxial Planar Transistor

for switching and AF amplifier applications.

The transistor is subdivided into four groups Q, R, S and E. according to its DC current gain.

On special request, these transistors can be manufactured in different pin configurations.



1. Emitter 2. Collector 3. Base

TO-92 Plastic Package Weight approx. 0.19g

## Absolute Maximum Ratings ( $T_a = 25^{\circ}C$ )

	Symbol	Value	Unit
Collector Base Voltage	V <sub>CBO</sub>	60	V
Collector Emitter Voltage	V <sub>CEO</sub>	50	V
Emitter Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	150	mA
Power Dissipation	P <sub>tot</sub>	300	mW
Junction Temperature	Tj	150	°C
Storage Temperature Range	Ts	-55 to +150	°C







## Characteristics at $T_{amb}$ =25 $^{o}C$

		Symbol	Min.	Тур.	Max.	Unit
DC Current Gain						
at V <sub>CE</sub> =6V, I <sub>C</sub> =1mA	Q	$h_{\text{FE}}$	120	-	270	-
	R	h <sub>FE</sub>	180	-	390	-
	S	h <sub>FE</sub>	270	-	560	-
	Е	$h_{\text{FE}}$	390	-	820	-
Collector Base Breakdown Voltage						
at I <sub>C</sub> =50μA		V <sub>(BR)CBO</sub>	60	-	-	V
Collector Emitter Breakdown Voltage						
at I <sub>C</sub> =1mA		$V_{(BR)CEO}$	50	-	-	V
Emitter Base Breakdown Voltage						
at I <sub>E</sub> =50μA		$V_{(BR)EBO}$	5	-	-	V
Collector Cutoff Current						
at V <sub>CB</sub> =60V		I <sub>CBO</sub>	-	-	0.1	μA
Emitter Cutoff Current						
at V <sub>EB</sub> =5V		I <sub>EBO</sub>	-	-	0.1	μA
Collector Saturation Voltage						
at $I_{C}$ =50mA, $I_{B}$ =5mA		$V_{\text{CE(sat)}}$	-	-	0.4	V
Gain Bandwidth Product						
at V <sub>CE</sub> =12V, I <sub>C</sub> =2mA		f⊤	-	180	-	MHz
Output Capacitance						
at $V_{CB}$ =12V, f=1MHz		C <sub>OB</sub>	-	2	3.5	pF





