

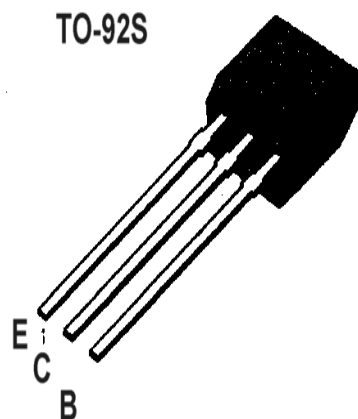
**NPN Transistors**

—NPN Silicon—

■■ **APPLICATION:** AF Power Amplifier, Medium-Speed Switching and Small-sized Motor Drivers Applications.

■■ **MAXIMUM RATINGS** (Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Collector-base voltage	V <sub>CBO</sub>	15	V
Collector-emitter voltage	V <sub>CEO</sub>	15	V
Emitter-base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>c</sub>	0.8	A
Base current	I <sub>cp</sub>	3	A
Collector Power Dissipation	P <sub>c</sub>	0.3	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55~150	°C



■■ **ELECTRICAL CHARACTERISTICS** (Ta=25°C, R<sub>G</sub>=10Ω)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION		
Collector-Base Breakdown Voltage	BV <sub>cbo</sub>	15			V	I <sub>c</sub> =10uA	I <sub>e</sub> =0	
Collector-Emitter Breakdown Voltage	BV <sub>ceo</sub>	15			V	I <sub>c</sub> =1mA	I <sub>b</sub> =0	
Emitter-Base Breakdown Voltage	BV <sub>ebo</sub>	5			V	I <sub>e</sub> =10uA	I <sub>c</sub> =0	
Collector Cut-off Current	I <sub>cbo</sub>			0.1	uA	V <sub>cb</sub> =12V	I <sub>e</sub> =0	
Emitter Cut-off Current	I <sub>ebo</sub>			0.1	uA	V <sub>eb</sub> =4V	I <sub>c</sub> =0	
Base-Emitter Saturation Voltage	V <sub>be(sat)</sub>		0.9	1.2	V	I <sub>c</sub> =0.4A	I <sub>b</sub> =20mA	
Collector-Emitter Saturation Voltage	V <sub>ce(sat)</sub>		0.1	0.2	V	I <sub>c</sub> =0.4A	I <sub>b</sub> =20mA	
DC Current Gain	h <sub>FE</sub>	140		800	β	V <sub>ce</sub> =2V	I <sub>c</sub> =0.05A	
Gain bandwidth product	f <sub>T</sub>		200		MHz	V <sub>ce</sub> =2V	I <sub>c</sub> =0.05A	
Common Base Output Capacitance	C <sub>ob</sub>		10		pF	V <sub>cb</sub> =10V	I <sub>e</sub> =0	f=1MHz

■■ **h<sub>FE</sub> Classification And Marking**

Print Mark	D1936S			
Classification	S	T	U	V
h <sub>FE</sub>	140~280	200~400	280~560	400~800