

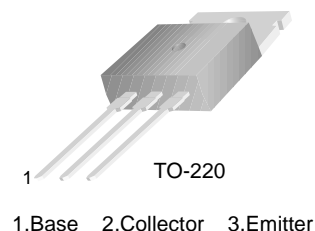
## NPN TRANSISTORS

**D2012**

■■ APPLICATION: Low Frequency Amplifier Applications.

■■ MAXIMUM RATING (Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Collector-base voltage	V <sub>CBO</sub>	60	V
Collector-emitter voltage	V <sub>CEO</sub>	60	V
Emitter-base voltage	V <sub>EBO</sub>	7	V
Collector Current	I <sub>C</sub>	3	A
Base Current	I <sub>B</sub>	0.3	A
Collector Power Dissipation	P <sub>c</sub>	25	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55-150	°C



■■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	RATING			UNIT
			MIN.	TYP.	MAX.	
Collector-Base Breakdown Voltage	BV <sub>CBO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	60			V
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> =50 mA, I <sub>B</sub> =0	60			V
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> =1mA, I <sub>C</sub> =0	7			V
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> =60 V, I <sub>E</sub> =0			100	uA
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> =7 V, I <sub>C</sub> =0			10	uA
DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =0.5A	100		320	β
	h <sub>FE2</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =3A	20			
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =2A, I <sub>B</sub> =0.2A		0.4	1	V
Base-Emitter Voltage	V <sub>BE(on)</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =0.5A		0.7	1	V
Gain bandwidth product	f <sub>T</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =0.5A		3		MHz

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

Mark	D2012	
Classification	Y	G
h <sub>FE</sub>	100~200	150~320