



TO-220 Plastic-Encapsulated Transistors

3DD13005 TRANSISTOR (NPN)

FEATURES

Power dissipation

$$P_{CM}: 1.5 \text{ W (Tamb=25°C)}$$

Collector current

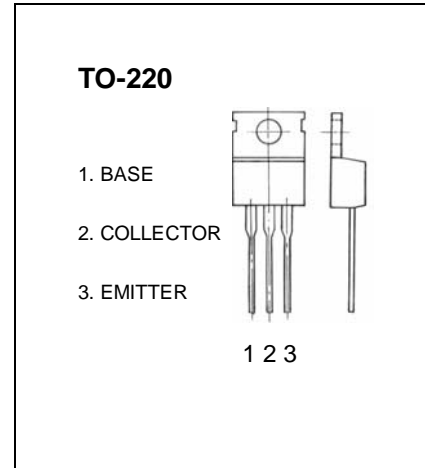
$$I_{CM}: 4 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO}: 700 \text{ V}$$

Operating and storage junction temperature range

$$T_J, T_{stg}: -55°C \text{ to } +150°C$$



ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 1000\mu A, I_E = 0$	700			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 10mA, I_B = 0$	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 1000\mu A, I_C = 0$	9			V
Collector cut-off current	I_{CBO}	$V_{CB} = 700V, I_E = 0$			1000	μA
Collector cut-off current	I_{CEO}	$V_{CE} = 400V, I_B = 0$			100	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 9V, I_C = 0$			1000	μA
DC current gain	h_{FE}	$V_{CE} = 5V, I_C = 1000mA$	10		40	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 2000mA, I_B = 500mA$			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 2000mA, I_B = 500mA$			1.6	V
Transition Frequency	f_T	$V_{CE} = 10V, I_C = 500mA$ $f = 1MHz$	5			MHz
Fall time	t_f	$I_{B1} = -I_{B2} = 0.4A, I_C = 2A$			0.9	μs
Storage time	t_s	$V_{CC} = 120V$			4	μs

CLASSIFICATION OF h_{FE}

Rank						
Range	10-15	15-20	20-25	25-30	30-35	35-40