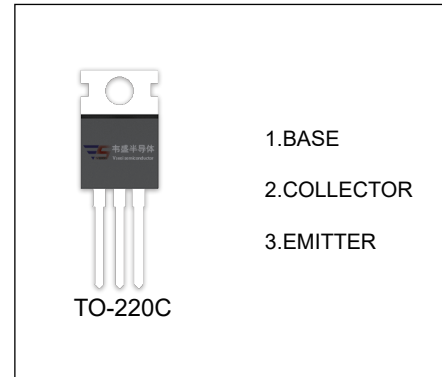


2SD1138 TRANSISTOR (NPN)

FEATURES

- Low Frequency Power Amplifier Color TV Vertical Deflection Output



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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	200	V
V_{CEO}	Collector-Emitter Voltage	150	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	2	A
P_C	Collector Power Dissipation	1.8	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	69	$^{\circ}\text{C}/\text{W}$
T_j, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=5\text{mA}, I_E=0$	200			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=50\text{mA}, I_B=0$	150			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=5\text{mA}, I_C=0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB}=120\text{V}, I_E=0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=4\text{V}, I_C=50\text{mA}$	60		200	
	$h_{FE(2)}$	$V_{CE}=10\text{V}, I_C=500\text{mA}$	60			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			3	V
Base-emitter voltage	V_{BE}	$V_{CE}=4\text{V}, I_C=50\text{mA}$			1	V
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		30		pF

*Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycles $\leq 2.0\%$.

CLASSIFICATION OF $h_{FE(1)}$

RANK	B	C
RANGE	60-120	100-200

Static Characteristic

