



TO-252 Plastic-Encapsulate Transistors

2SD1899 TRANSISTOR (NPN)

FEATURES

- Low $V_{CE(sat)}$
- High Transition Frequency

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

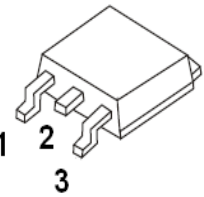
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current	3	A
P_C	Collector Power Dissipation	1	W
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	125	$^{\circ}\text{C/W}$
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}\text{C}$

TO - 252

1. BASE

2. COLLECTOR 1 2 3

3. EMITTER



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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	7			V
Collector cut-off current	I_{CBO}	$V_{CB}=60\text{V}, I_E=0$			10	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=7\text{V}, I_C=0$			10	μA
DC current gain	$h_{FE(1)}$ *	$V_{CE}=2\text{V}, I_C=0.2\text{A}$	60			
	$h_{FE(2)}$ *	$V_{CE}=2\text{V}, I_C=0.6\text{A}$	100		400	
	$h_{FE(3)}$ *	$V_{CE}=2\text{V}, I_C=2\text{A}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$ *	$I_C=1.5\text{A}, I_B=0.15\text{A}$			0.25	V
Base-emitter saturation voltage	$V_{BE(sat)}$ *	$I_C=1.5\text{A}, I_B=0.15\text{A}$			1.2	V
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		30		pF
Transition frequency	f_T	$V_{CE}=5\text{V}, I_C=1.5\text{A}$		120		MHz

*Pulse test: pulse width $\leq 350\mu\text{s}$, duty cycles $\leq 2.0\%$.

CLASSIFICATION OF $h_{FE(2)}$

RANK	M	L	K
RANGE	100-200	160-320	200-400

Typical Characteristics

2SD1899

