



## TO-251/TO-252-2 Plastic-Encapsulated Transistors

### 2SD1802 TRANSISTOR (NPN)

#### FEATURES

Power dissipation

$$P_{CM}: 1 \text{ W (Tamb=25°C)}$$

Collector current

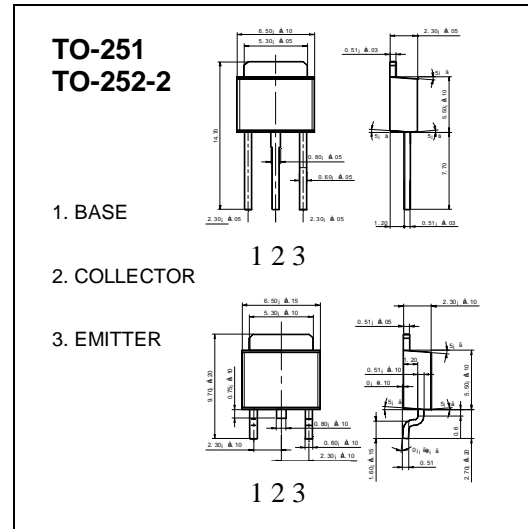
$$I_{CM}: 3 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO}: 60 \text{ V}$$

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	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=40V, I_E=0$			1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4V, I_C=0$			1	$\mu A$
DC current gain	$h_{FE(1)}$	$V_{CE}=2V, I_C=100mA$	100		560	
	$h_{FE(2)}$	$V_{CE}=2V, I_C=3A$	35			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=2A, I_B=100mA$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=2A, I_B=100mA$			1.2	V
Transition frequency	$f_T$	$V_{CE}=10V, I_C=50mA$		150		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$		25		pF
Turn-off time	$t_{on}$	$V_{CC}=25V, I_C=1A$ $I_{B1}=-I_{B2}=0.1A$		70		nS
Fall time	$t_f$			650		
Storage time	$t_s$			35		

#### CLASSIFICATION OF $h_{FE(1)}$

Rank	R	S	T	U
Range	100-200	140-280	200-400	280-560
Marking				

# Typical Characteristics

# 2SD1802

