



JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

TO-251/TO-252-2 Plastic-Encapsulate Transistors

MJD122 TRANSISTOR (NPN)

FEATURES

- High DC current gain
- Electrically similar to popular TIP122
- Built-in a damper diode at E-C

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	8	A
P_C	Collector Power Dissipation	1.5	W
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=1\text{mA}, I_E=0$	100			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=30\text{mA}, I_B=0$	100			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=3\text{mA}, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=100\text{V}, I_E=0$			10	μA
Collector-emitter cut-off current	I_{CEO}	$V_{CE}=50\text{V}, I_E=0$			10	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			2	mA
DC current gain	$h_{FE(1)}$	$V_{CE}=4\text{V}, I_C=4\text{A}$	1000		12000	
	$h_{FE(2)}$	$V_{CE}=4\text{V}, I_C=8\text{A}$	100			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C=4\text{A}, I_B=16\text{mA}$			2	V
	$V_{CE(sat)2}$	$I_C=8\text{A}, I_B=80\text{mA}$			4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=8\text{A}, I_B=80\text{mA}$			4.5	V
Base-emitter voltage	V_{BE}	$V_{CE}=4\text{V}, I_C=4\text{A}$			2.8	V
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=0.1\text{MHz}$			200	pF

TO-251
TO-252-2



1. BASE

2. COLLECTOR

3. EMITTER



Typical Characteristics

MJD122

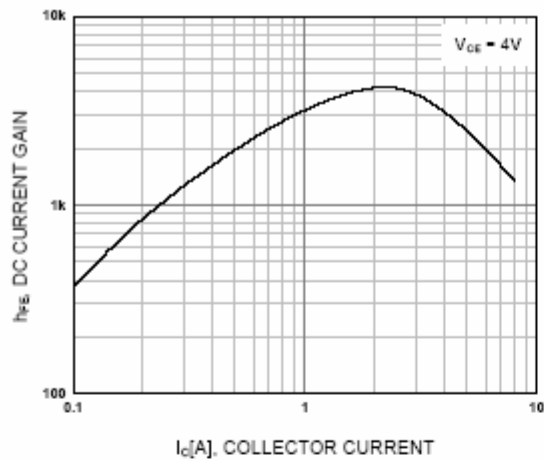


Figure 1. DC current Gain

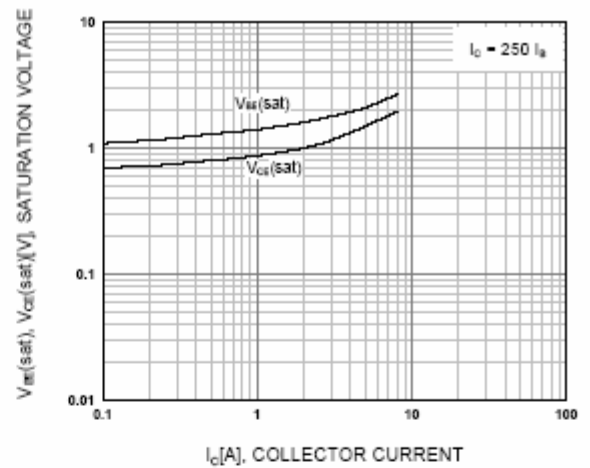


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

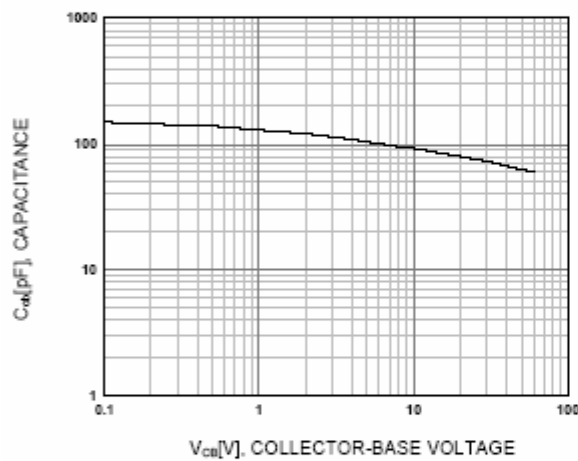


Figure 3. Collector Output Capacitance

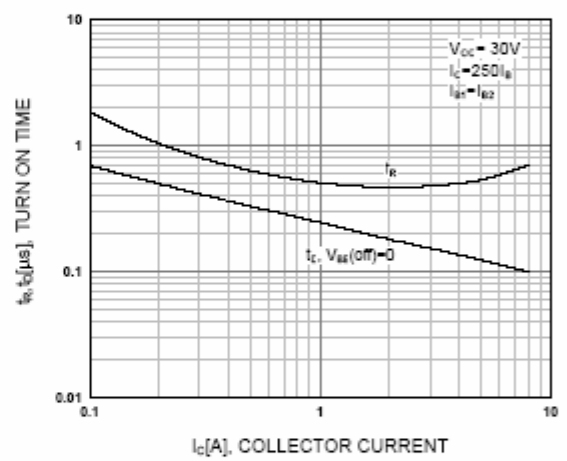


Figure 4. Turn On Time

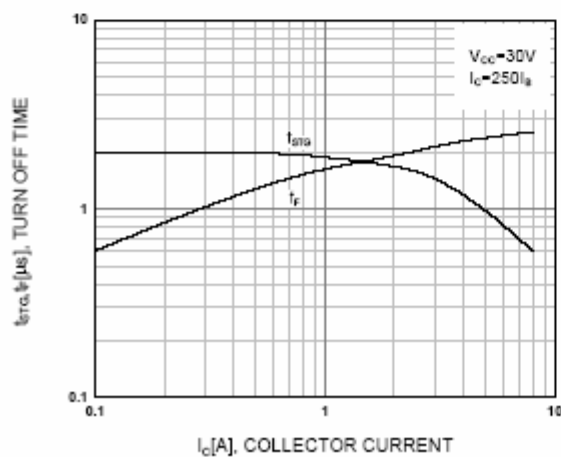


Figure 5. Turn Off Time

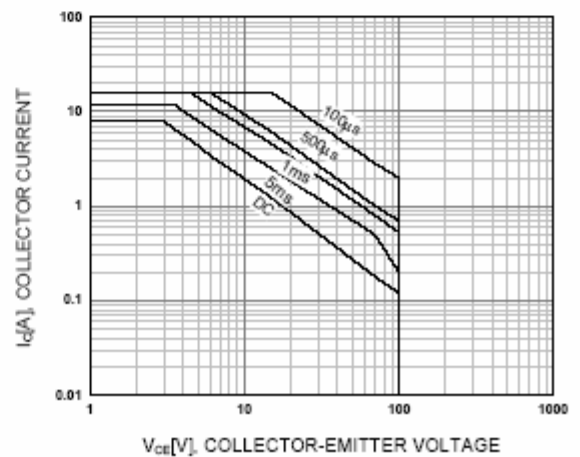


Figure 6. Safe Operating Area