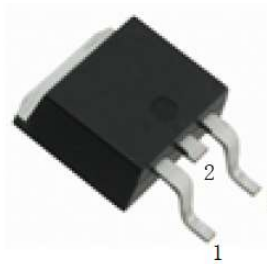


MJD127R-CH

PNP Silicon Power Darlington Transistor

Features

- AEC-Q101 Qualified
- Halogen and Antimony Free(HAF), RoHS compliant



1.Base 2.Collector 3.Emitter
TO-252 Plastic Package

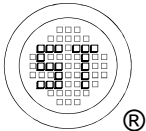
Absolute Maximum Ratings ($T_a = 25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Collector Base Voltage	$-V_{CBO}$	100	V
Collector Emitter Voltage	$-V_{CEO}$	100	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	8	A
Peak Collector Current, Pulsed	$-I_{CM}$	16	A
Base Current	$-I_B$	120	mA
Total Dissipation $T_C = 25^{\circ}\text{C}$	P_{tot}	20	W
Total Dissipation ¹⁾ $T_a = 25^{\circ}\text{C}$	P_{tot}	1.75	W
Operating Junction and Storage Temperature Range	T_j, T_{stg}	- 65 to + 150	$^{\circ}\text{C}$

Thermal Characteristics

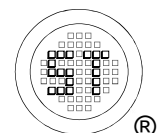
Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Case	$R_{\theta JC}$	6.25	$^{\circ}\text{C/W}$
Thermal Resistance from Junction to Ambient ¹⁾	$R_{\theta JA}$	71.4	$^{\circ}\text{C/W}$

¹⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.



Characteristics at $T_C = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $-V_{CE} = 4\text{ V}$, $-I_C = 4\text{ A}$ at $-V_{CE} = 4\text{ V}$, $-I_C = 8\text{ A}$	h_{FE} h_{FE}	1000 100	12000 -	- -
Collector Base Breakdown Voltage at $-I_C = 100\text{ }\mu\text{A}$	$-V_{(BR)CBO}$	100	-	V
Collector Emitter Breakdown Voltage at $-I_C = 30\text{ mA}$	$-V_{(BR)CEO}$	100	-	V
Emitter Base Breakdown Voltage at $-I_E = 2.5\text{ mA}$	$-V_{(BR)EBO}$	5	-	V
Collector Emitter Cutoff Current at $-V_{CE} = 50\text{ V}$	$-I_{CEO}$	-	10	μA
Collector Base Cutoff Current at $-V_{CB} = 100\text{ V}$	$-I_{CBO}$	-	10	μA
Emitter Base Cutoff Current at $-V_{EB} = 5\text{ V}$	$-I_{EBO}$	-	2	mA
Collector Emitter Saturation Voltage at $-I_C = 4\text{ A}$, $-I_B = 16\text{ mA}$ at $-I_C = 8\text{ A}$, $-I_B = 80\text{ mA}$	$-V_{CE(sat)}$	- -	2 4	V
Base Emitter Saturation Voltage at $-I_C = 8\text{ A}$, $-I_B = 80\text{ mA}$	$-V_{BE(sat)}$	-	4.5	V
Base-Emitter On Voltage at $-V_{CE} = 4\text{ V}$, $-I_C = 4\text{ A}$	$-V_{BE(on)}$	-	2.8	V
Current Gain Bandwidth Product at $-V_{CE} = 4\text{ V}$, $-I_C = 3\text{ A}$, $f = 1\text{ MHz}$	f_T	4	-	MHz
Output Capacitance at $-V_{CB} = 10\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$	C_{ob}	-	300	pF



Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

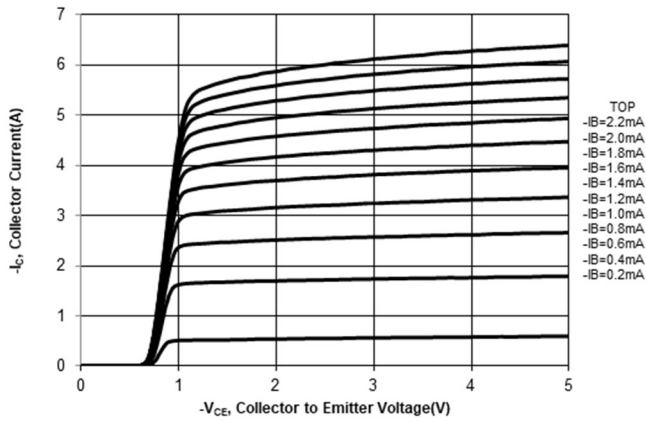


Fig. 2 Collector Current vs. V_{BE}

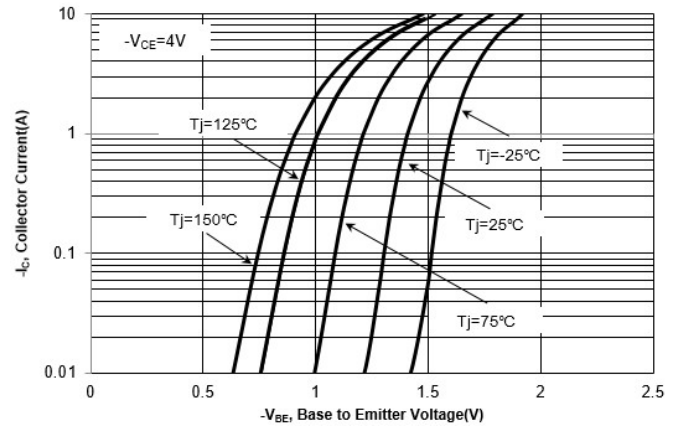


Fig. 3 h_{FE} vs. Collector Current

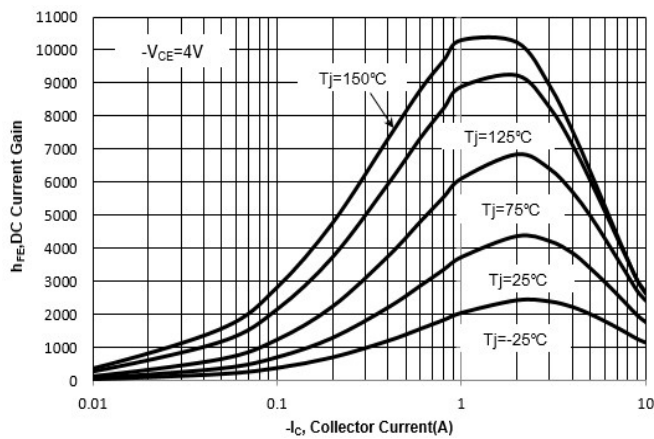


Fig. 4 $V_{BE(sat)}$ vs. Collector Current

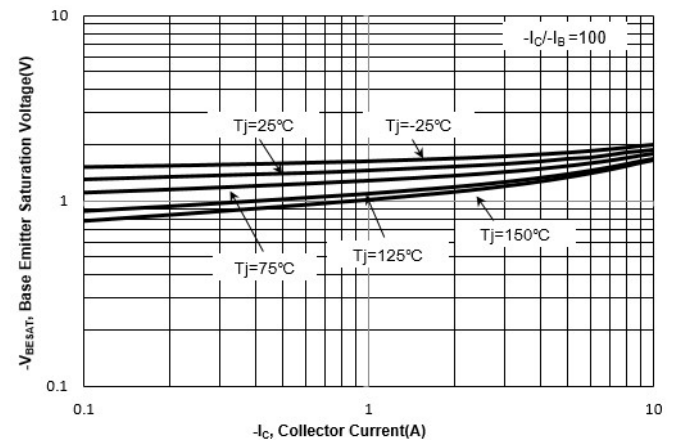


Fig. 5 $V_{CE(sat)}$ vs. Collector Current

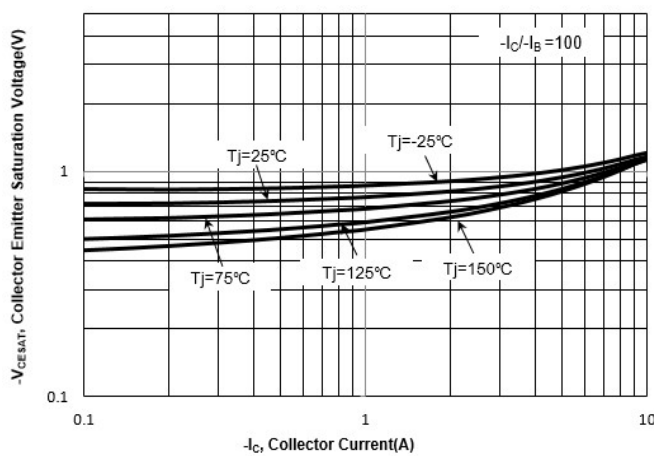


Fig. 6. Output Capacitance

