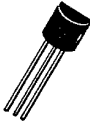


T-29-27
Signal Transistors

MPS-A12

Silicon Darlington Transistors



TO-92

The GE/RCA MPS-A12 is a planar epitaxial passivated NPN silicon Darlington transistor designed for preamplifier input applications where high impedance is a requirement. This type is supplied in JEDEC TO-92 package.

MAXIMUM RATINGS, Absolute-Maximum Values:

COLLECTOR TO EMITTER VOLTAGE (V_{CE0})	20 V
COLLECTOR TO BASE VOLTAGE (V_{CBO})	20 V
EMITTER TO BASE VOLTAGE (V_{EBO})	4 V
CONTINUOUS COLLECTOR CURRENT (I_C)	500 mA
TOTAL POWER DISSIPATION ($T_A \leq 25^\circ\text{C}$)	625 mW
DERATING FACTOR ($T_A > 25^\circ\text{C}$)	5 mW/ $^\circ\text{C}$
OPERATING TEMPERATURE (T_J)	-55 to +150 $^\circ\text{C}$
STORAGE TEMPERATURE (T_{STG})	-55 $^\circ\text{C}$ to +150 $^\circ\text{C}$
LEAD TEMPERATURE, 1/16" \pm 1/32" (1.58mm \pm 0.8mm) from case for 10s max. (T_L)	+230 $^\circ\text{C}$

ELECTRICAL CHARACTERISTICS, At Ambient Temperature (T_A) = 25 $^\circ\text{C}$ Unless Otherwise Specified

CHARACTERISTICS	SYMBOL	LIMITS		UNITS
		MIN.	MAX.	
Collector-Emitter Breakdown Voltage ($I_C = 100\mu\text{A}$)	BV_{CES}	20	—	V
Collector Cutoff Current ($V_{CE} = 15\text{Vdc}$, $V_{BE} = 0$)	I_{CES}	—	100	nA
Collector Cutoff Current ($V_{CB} = 15\text{Vdc}$, $I_E = 0$)	I_{CBO}	—	100	
Emitter Cutoff Current ($V_{EB} = 10\text{Vdc}$, $I_C = 0$)	I_{EBO}	—	100	
DC Forward Current Transfer Ratio ($I_C = 10\text{ mAdc}$, $V_{CE} = 5\text{V}$)	h_{FE}	20,000	—	—
Small-Signal Current Transfer Ratio ($I_C = 10\text{ mAdc}$, $V_{CE} = 5\text{ Vdc}$, $f = 1\text{ kHz}$)	h_{fe}	20,000	—	—
Collector-Emitter Saturation Voltage ($I_C = 10\text{ mAdc}$, $I_B = 0.01\text{ mA}$)	$V_{CE(SAT)}$	—	1	V
Base-Emitter On-Voltage ($I_C = 10\text{ mAdc}$, $V_{CE} = 5\text{V}$)	$V_{BE(ON)}$	—	1.4	
Output Admittance ($V_{CB} = 10\text{Vdc}$, $I_E = 0$, $f = 100\text{ kHz}$)	C_{cb}	—	8	pF

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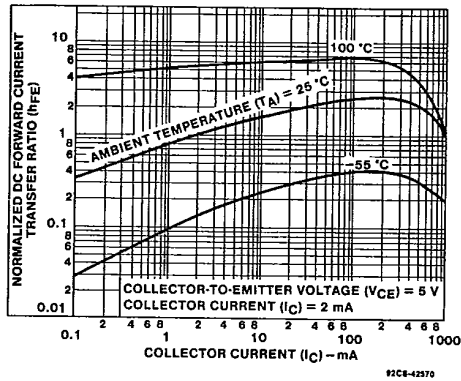


Fig. 1 - Normalized dc forward-current transfer ratio characteristics.

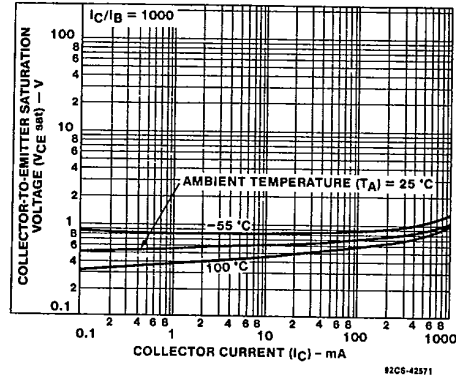


Fig. 2 - Typical collector-to-emitter saturation voltage characteristics.

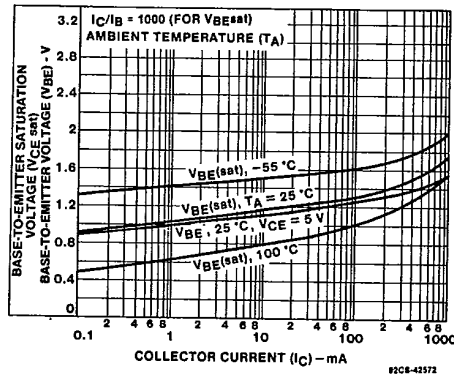


Fig. 3 - Typical base-to-emitter saturation voltage and base-to-emitter voltage characteristics.

TERMINAL CONNECTIONS

- Lead 1 - Emitter
- Lead 2 - Base
- Lead 3 - Collector