



TO-92 Plastic-Encapsulate Transistors

MPSA13, 14 Darlington TRANSISTOR (NPN)

FEATURES

Power dissipation

$$P_{CM}: 0.625 \text{ W (Tamb=25}^{\circ}\text{C)}$$

Collector current

$$I_{CM}: 0.5 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO}: 30 \text{ V}$$

Operating and storage junction temperature range

$$T_J, T_{stg}: -55^{\circ}\text{C to } +150^{\circ}\text{C}$$

TO-92

1. EMITTER

2. BASE

3. COLLECTOR



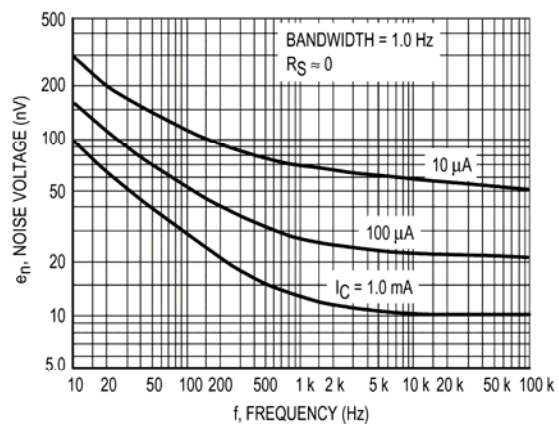
ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	30		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	30		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	10		V
Collector cut-off current	I_{CBO}	$V_{CB} = 30\text{V}, I_E = 0$		0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 10\text{V}, I_C = 0$		0.1	μA
DC current gain	$H_{FE(1)}^*$	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$ MPSA13 MPSA14	5000 10000		
	$H_{FE(2)}^*$	$V_{CE} = 5\text{V}, I_C = 100\text{mA}$ MPSA13 MPSA14	10000 20000		
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C = 100\text{mA}, I_B = 0.1\text{mA}$		1.5	V
Base-emitter voltage	$V_{BE(on)}^*$	$V_{CE} = 5\text{V}, I_C = 100\text{mA}$		2.0	V
Transition frequency	f_T	$V_{CE} = 5\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$	125		MHz

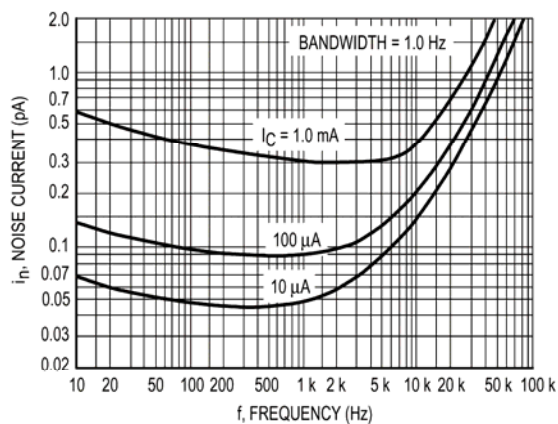
* Pulse Test: pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

Typical characteristics

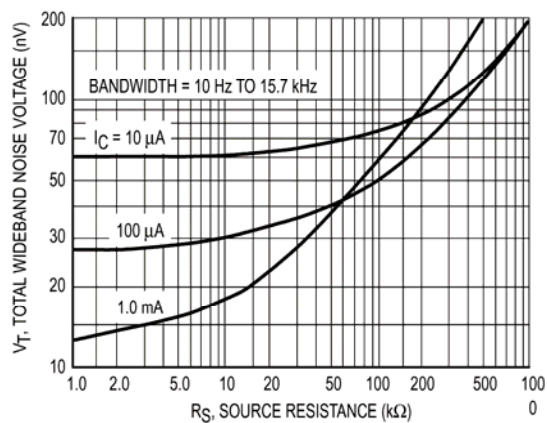
MPSA13/14



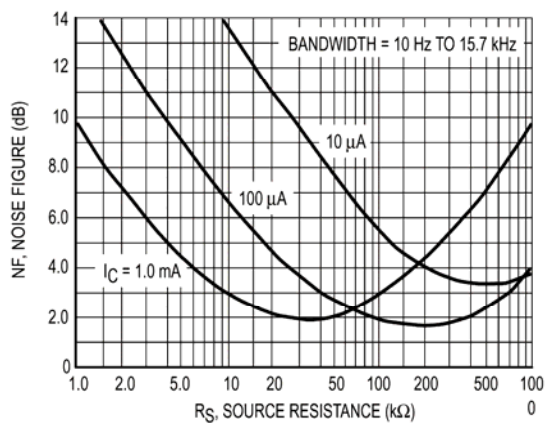
Noise Voltage



Noise Current



Total Wideband Noise Voltage



Wideband Noise Figure

