

RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

TO-92

FEATURES

Darlington TRANSISTOR

Power dissipation

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

Collector current

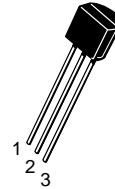
I_{CM} : 0.5 A

Collector-base voltage

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

Operating and storage junction temperature range

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



- 1. EMITTER
- 2. BASE
- 3. COLLECTOR

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

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

* Pulse Test: pulse width 300 μs , duty cycle 2%.

Typical Characteristics

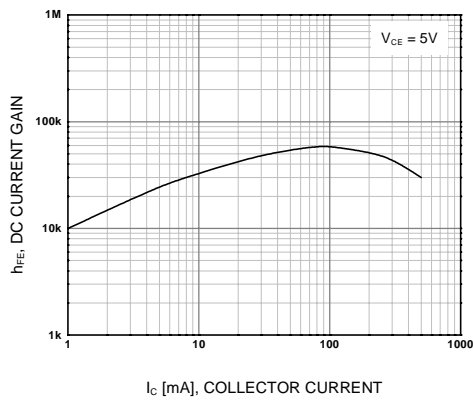
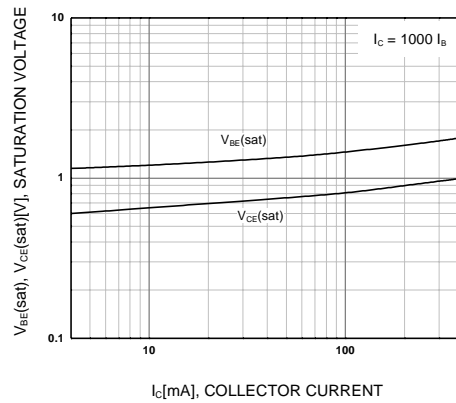


Figure 1. DC current Gain



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

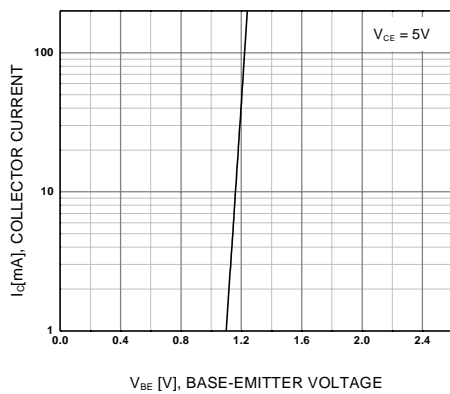


Figure 3. Base-Emitter On Voltage

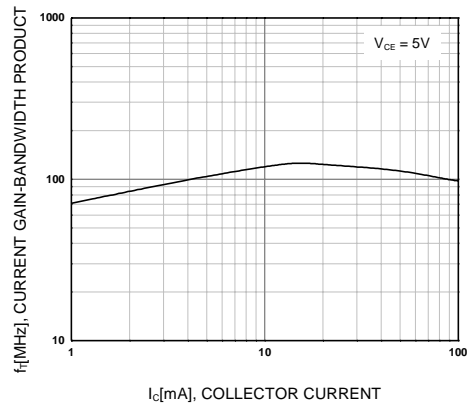
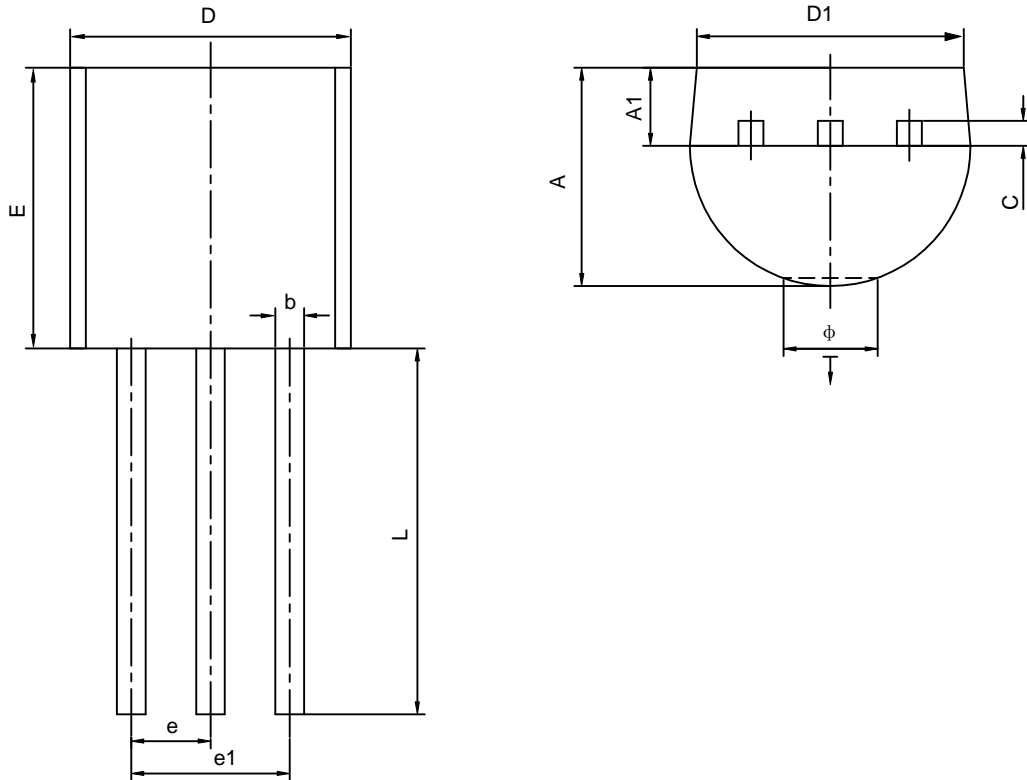


Figure 4. Current Gain Bandwidth Product

TO-92 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.400	4.700	0.173	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270TYP		0.050TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Ö		1.600		0.063
↓	0.000	0.380	0.000	0.015