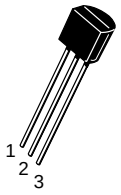
Darlington Transistors
PNP Silicon

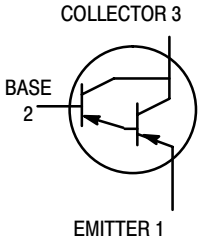
MPSA62
MPSA63
MPSA64*

MPSA55, MPSA56
For Specifications,
See MPSA05, MPSA06 Data

***ON Semiconductor Preferred Device**



CASE 29–04, STYLE 1
TO–92 (TO–226AA)



MAXIMUM RATINGS

Rating	Symbol	MPSA62	MPSA63 MPSA64	Unit
Collector–Emitter Voltage	V_{CES}	–20	–30	Vdc
Collector–Base Voltage	V_{CBO}	–20	–30	Vdc
Emitter–Base Voltage	V_{EBO}	–10		Vdc
Collector Current — Continuous	I_C	–500		mAdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	625 5.0		mW mW/°C
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	1.5 12		Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–55 to +150		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	°C/W

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector–Emitter Breakdown Voltage (I_C = –100 μAdc, V_{BE} = 0) MPSA62 MPSA63, MPSA64	$V_{(BR)CES}$	 –20 –30	 — —	Vdc
Collector Cutoff Current (V_{CB}= –15 Vdc, I_E = 0) MPSA62 (V_{CB} = –30 Vdc, I_E = 0) MPSA63, MPSA64	I_{CBO}	 — —	 –100 –100	nAdc
Emitter Cutoff Current (V_{EB} = –10 Vdc, I_C = 0)	I_{EBO}	—	–100	nAdc

Preferred devices are ON Semiconductor recommended choices for future use and best overall value.

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted) (Continued)

Characteristic		Symbol	Min	Max	Unit
ON CHARACTERISTICS[1]					
DC Current Gain		h_{FE}			—
(I_C = –10 mAdc, V_{CE} = –5.0 Vdc)	MPSA63		5,000	—	
	MPSA64		10,000	—	
	MPSA62		20,000	—	
(I_C = –100 mAdc, V_{CE} = –5.0 Vdc)	MPSA63		10,000	—	
	MPSA64		20,000	—	
Collector–Emitter Saturation Voltage		$V_{CE(sat)}$			Vdc
(I_C = –10 mAdc, I_B = –0.01 mAdc)	MPSA62		—	–1.0	
(I_C = –100 mAdc, I_B = –0.1 mAdc)	MPSA63, MPSA64		—	–1.5	
Base–Emitter On Voltage		$V_{BE(on)}$			Vdc
(I_C = –10 mAdc, V_{CE} = –5.0 Vdc)	MPSA62		—	–1.4	
(I_C = –100 mAdc, V_{CE} = –5.0 Vdc)	MPSA63, MPSA64		—	–2.0	
SMALL–SIGNAL CHARACTERISTICS					
Current–Gain — Bandwidth Product[2]		f_T	125	—	MHz
(I_C = –100 mAdc, V_{CE} = –5.0 Vdc, f = 100 MHz)	MPSA63, MPSA64				

1. Pulse Test: Pulse Width $\leq$ 300 μs; Duty Cycle $\leq$ 2.0%.
2. $f_T = |h_{fe}| \bullet f_{test}$.

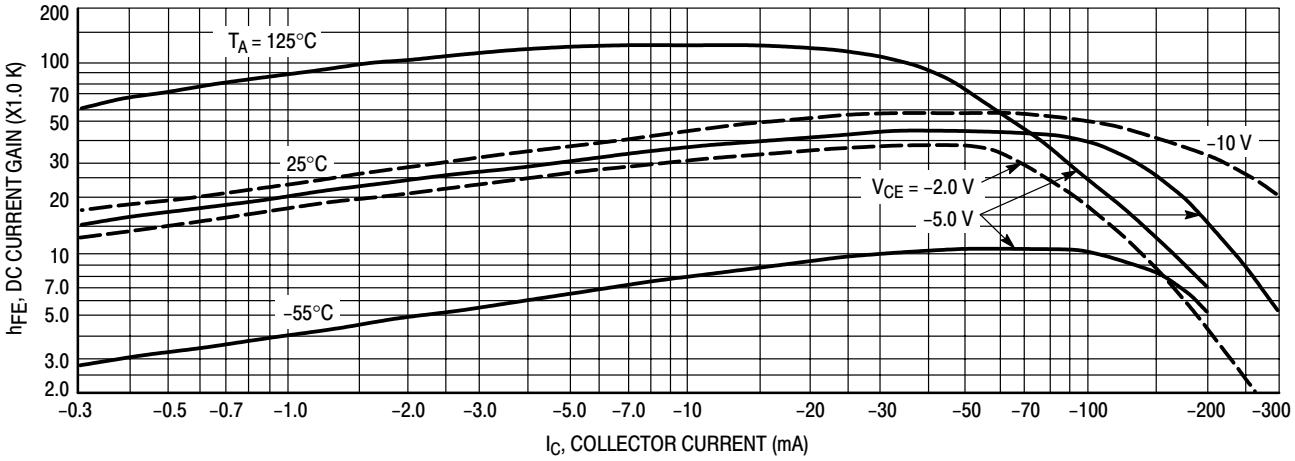


Figure 1. DC Current Gain

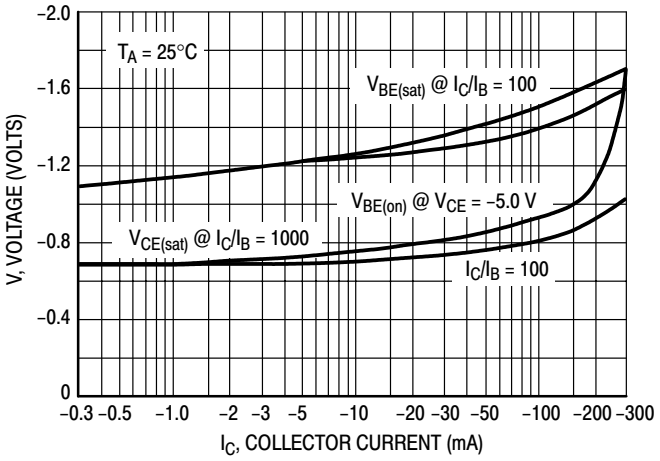


Figure 2. “On” Voltage

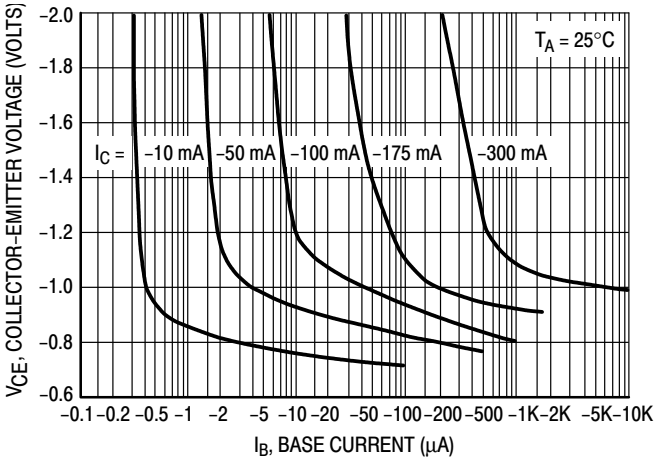


Figure 3. Collector Saturation Region

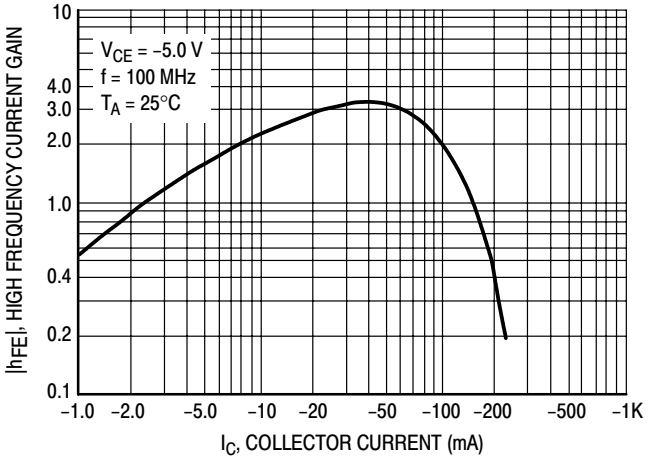


Figure 4. High Frequency Current Gain

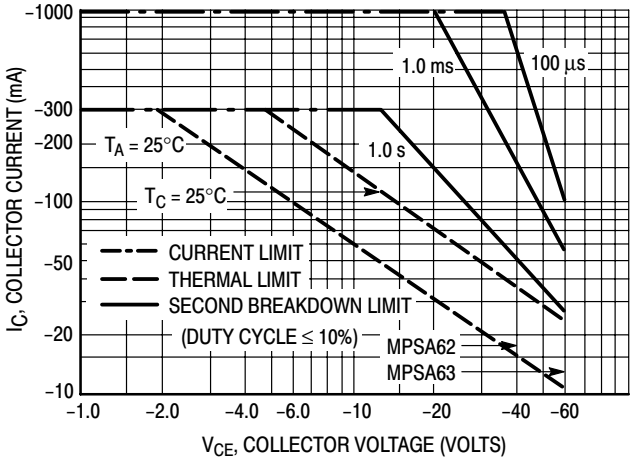
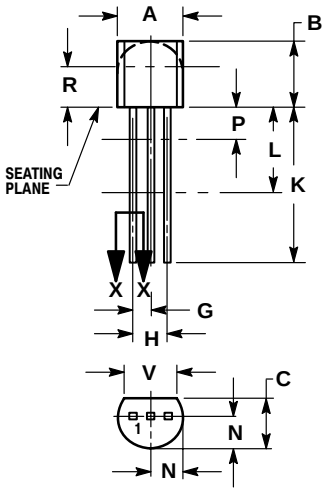
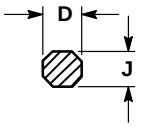


Figure 5. Active Region, Safe Operating Area

PACKAGE DIMENSIONS

TO–92 (TO–226)
CASE 29–11
ISSUE AL





SECTION X–X

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.135	---	3.43	---

STYLE 1:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

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