

MPSA42, MPSA43

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage (Note 1) (I _C = 1.0 mA _{dc} , I _B = 0)	MPSA42 MPSA43	V _{(BR)CEO}	300 200	– –	V _{dc}
Collector–Base Breakdown Voltage (I _C = 100 µA _{dc} , I _E = 0)	MPSA42 MPSA43	V _{(BR)CBO}	300 200	– –	V _{dc}
Emitter–Base Breakdown Voltage (I _E = 100 µA _{dc} , I _C = 0)		V _{(BR)EBO}	6.0	–	V _{dc}
Collector Cutoff Current (V _{CB} = 200 V _{dc} , I _E = 0) (V _{CB} = 160 V _{dc} , I _E = 0)	MPSA42 MPSA43	I _{CBO}	– –	0.1 0.1	µA _{dc}
Emitter Cutoff Current (V _{EB} = 6.0 V _{dc} , I _C = 0) (V _{EB} = 4.0 V _{dc} , I _C = 0)	MPSA42 MPSA43	I _{EBO}	– –	0.1 0.1	µA _{dc}

ON CHARACTERISTICS (Note 1)

DC Current Gain (I _C = 1.0 mA _{dc} , V _{CE} = 10 V _{dc}) (I _C = 10 mA _{dc} , V _{CE} = 10 V _{dc}) (I _C = 30 mA _{dc} , V _{CE} = 10 V _{dc})		h _{FE}	25 40 40	– – –	–
Collector–Emitter Saturation Voltage (I _C = 20 mA _{dc} , I _B = 2.0 mA _{dc})	MPSA42 MPSA43	V _{CE(sat)}	– –	0.5 0.4	V _{dc}
Base–Emitter Saturation Voltage (I _C = 20 mA _{dc} , I _B = 2.0 mA _{dc})		V _{BE(sat)}	–	0.9	V _{dc}

SMALL–SIGNAL CHARACTERISTICS

Current–Gain – Bandwidth Product (I _C = 10 mA _{dc} , V _{CE} = 20 V _{dc} , f = 100 MHz)		f _T	50	–	MHz
Collector–Base Capacitance (V _{CB} = 20 V _{dc} , I _E = 0, f = 1.0 MHz)	MPSA42 MPSA43	C _{cb}	– –	3.0 4.0	pF

1. Pulse Test: Pulse Width ≤ 300 µs, Duty Cycle ≤ 2%.

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ORDERING INFORMATION

Device	Package	Shipping [†]
MPSA42	TO-92	5000 Units / Box
MPSA42G	TO-92 (Pb-Free)	5000 Units / Box
MPSA42RL1	TO-92	2000 / Tape & Reel
MPSA42RL1G	TO-92 (Pb-Free)	2000 / Tape & Reel
MPSA42RLRA	TO-92	2000 / Tape & Reel
MPSA42RLRAG	TO-92 (Pb-Free)	2000 / Tape & Reel
MPSA42RLRM	TO-92	2000 / Ammo Pack
MPSA42RLRMG	TO-92 (Pb-Free)	2000 / Ammo Pack
MPSA42RLRP	TO-92	2000 / Ammo Pack
MPSA42RLRPG	TO-92 (Pb-Free)	2000 / Ammo Pack
MPSA42ZL1	TO-92	2000 / Ammo Pack
MPSA42ZL1G	TO-92 (Pb-Free)	2000 / Ammo Pack
MPSA43	TO-92	5000 Units / Box
MPSA43G	TO-92 (Pb-Free)	5000 Units / Box
MPSA43RLRA	TO-92	2000 / Tape & Reel
MPSA43RLRAG	TO-92 (Pb-Free)	2000 / Tape & Reel
MPSA43ZL1	TO-92	2000 / Ammo Pack
MPSA43ZL1G	TO-92 (Pb-Free)	2000 / Ammo Pack

[†]For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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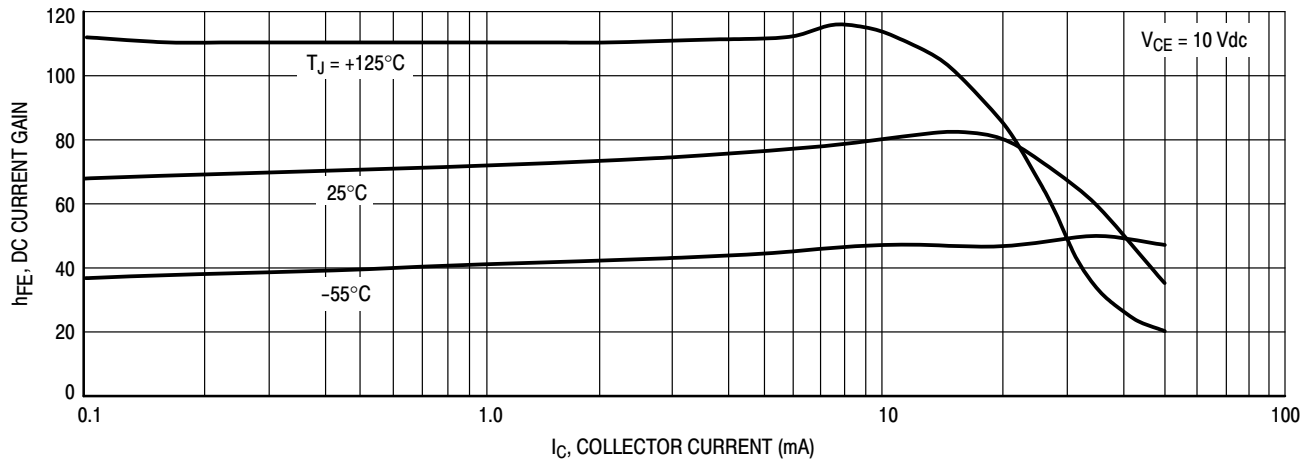


Figure 1. DC Current Gain

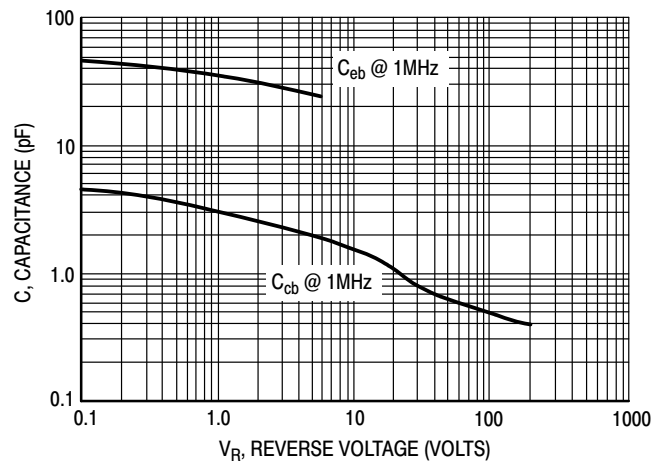


Figure 2. Capacitance

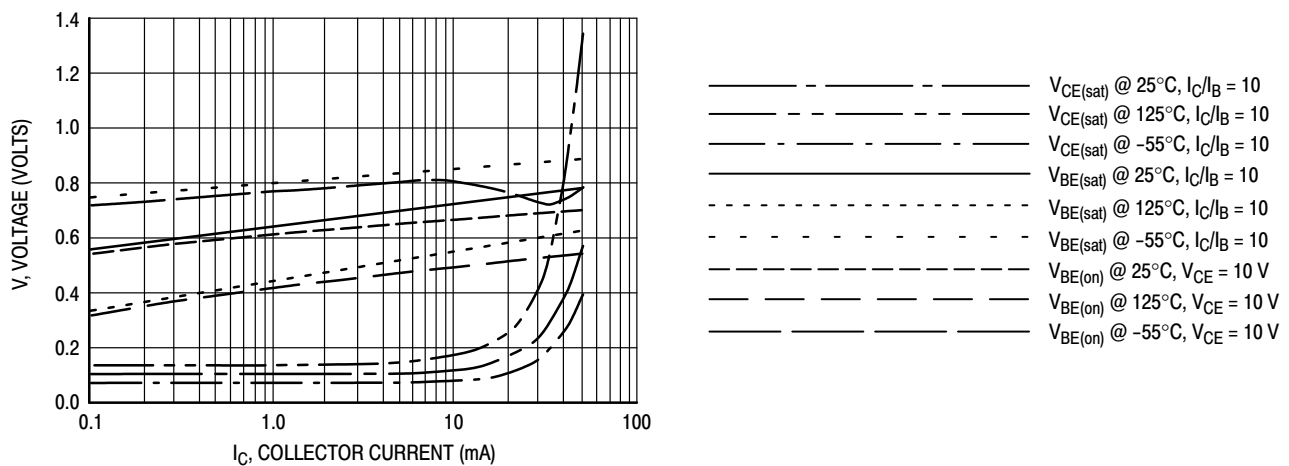


Figure 3. "ON" Voltages

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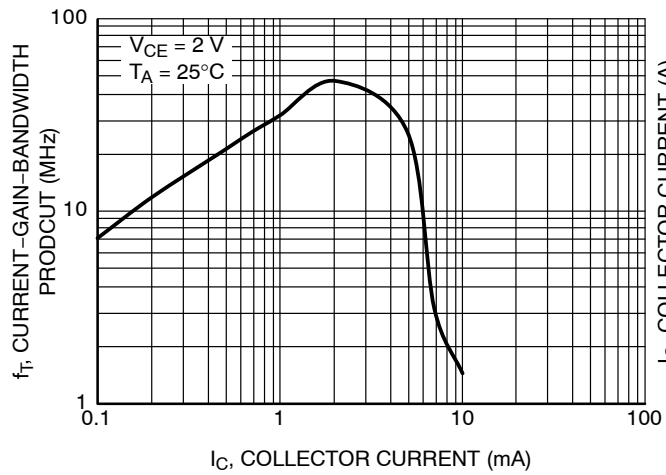


Figure 4. Current-Gain-Bandwidth Product

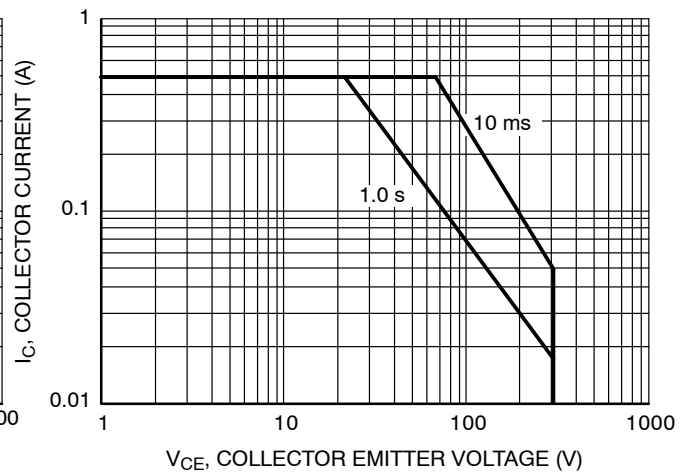
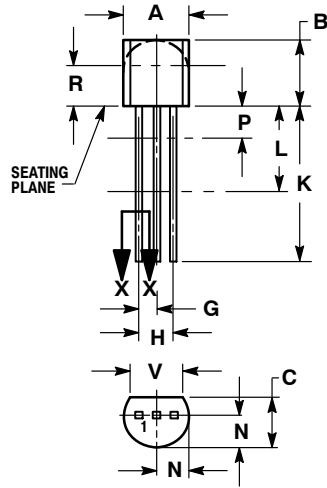


Figure 5. Safe Operating Area

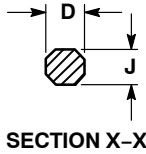
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PACKAGE DIMENSIONS

TO-92 (TO-226)
CASE 29-11
ISSUE AM



STRAIGHT LEAD
BULK PACK



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.

DIM	INCHES		MILLIMETERS	
	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:

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

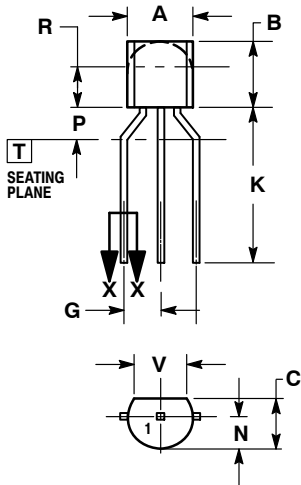
STYLE 14:

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

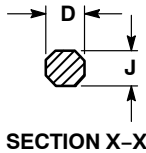
NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	MILLIMETERS	
	MIN	MAX
A	4.45	5.20
B	4.32	5.33
C	3.18	4.19
D	0.40	0.54
G	2.40	2.80
J	0.39	0.50
K	12.70	---
N	2.04	2.66
P	1.50	4.00
R	2.93	---
V	3.43	---



BENT LEAD
TAPE & REEL
AMMO PACK



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