



Micro Commercial Components

Micro Commercial Components
20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

MPSA42 THRU MPSA43

Features

- Through Hole Package
- 150°C Junction Temperature
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)

NPN Silicon High Voltage Transistor 625mW

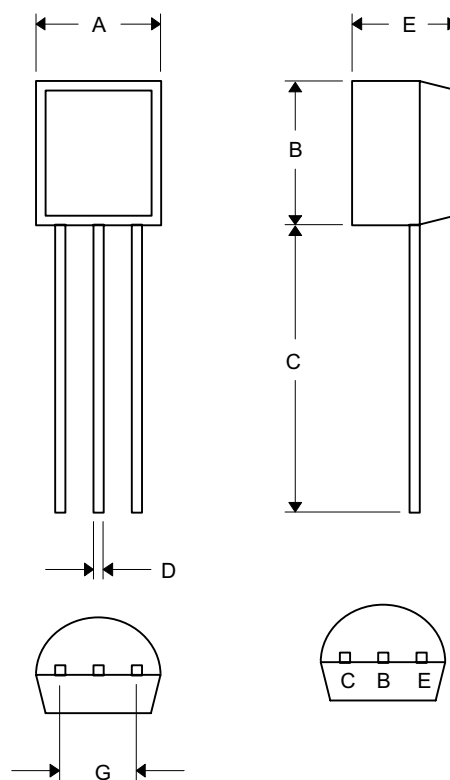
Mechanical Data

- Case: TO-92, Molded Plastic
- Marking:
MPSA42 ----A42
MPSA43 ----MPSA43

Maximum Ratings @ 25°C Unless Otherwise Specified

Charateristic	Symbol	Value	Unit
Collector-Emitter Voltage MPSA42 MPSA43	V_{CEO}	300 200	V
Collector-Base Voltage MPSA42 MPSA43	V_{CBO}	300 200	V
Emitter-Base Voltage MPSA42 MPSA43	V_{EBO}	5.0	V
Collector Current(DC)	I_C	300	mA
Power Dissipation@ $T_A=25^\circ\text{C}$	P_d	625 5.0	mW mW/°C
Power Dissipation@ $T_C=25^\circ\text{C}$	P_d	1.5 12	W mW/°C
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	200	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	°C/W
Operating & Storage Temperature	T_j, T_{STG}	-55~150	°C

TO-92



DIM	DIMENSIONS				NOTE
	INCHES		MM		
A	.170	.190	4.33	4.83	
B	.170	.190	4.30	4.83	
C	.550	.590	13.97	14.97	
D	.010	.020	0.36	0.56	
E	.130	.160	3.30	3.96	
G	.096	.104	2.44	2.64	

MPSA42 thru MPSA43

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
----------------	--------	-----	-----	------

OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage ⁽¹⁾ ($I_C = 1.0\text{ mA}$, $I_B = 0$)	MPSA42 MPSA43	$V_{(BR)CEO}$	300 200	— —	Vdc
Collector–Base Breakdown Voltage ($I_C = 100\text{ }\mu\text{A}$, $I_E = 0$)	MPSA42 MPSA43	$V_{(BR)CBO}$	300 200	— —	Vdc
Emitter–Base Breakdown Voltage ($I_E = 10\text{ }\mu\text{A}$, $I_C = 0$)		$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 200\text{ Vdc}$, $I_E = 0$) ($V_{CB} = 160\text{ Vdc}$, $I_E = 0$)	MPSA42 MPSA43	I_{CBO}	— —	0.25 0.1	μA
Emitter Cutoff Current ($V_{EB} = 3.0\text{ Vdc}$, $I_C = 0$) ($V_{EB} = 4.0\text{ Vdc}$, $I_C = 0$)	MPSA42 MPSA43	I_{EBO}	— —	0.25 0.1	μA

ON CHARACTERISTICS⁽¹⁾

DC Current Gain ($I_C = 1.0\text{ mA}$, $V_{CE} = 10\text{ Vdc}$) ($I_C = 10\text{ mA}$, $V_{CE} = 10\text{ Vdc}$) ($I_C = 50\text{ mA}$, $V_{CE} = 10\text{ Vdc}$)		h_{FE}	25 80 25	— —	250
Collector–Emitter Saturation Voltage ($I_C = 20\text{ mA}$, $I_B = 2.0\text{ mA}$)	MPSA42 MPSA43	$V_{CE(sat)}$	— —	0.5 0.4	Vdc
Base–Emitter Saturation Voltage ($I_C = 20\text{ mA}$, $I_B = 2.0\text{ mA}$)		$V_{BE(sat)}$	—	0.9	Vdc

SMALL–SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product ($I_C = 10\text{ mA}$, $V_{CE} = 5\text{ Vdc}$, $f = 30\text{ MHz}$)		f_T	50	—	MHz
Collector–Base Capacitance ($V_{CB} = 20\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	MPSA42 MPSA43	C_{cb}	— —	3.0 4.0	pF

1. Pulse Test: Pulse Width $\leq 300\text{ }\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

MPSA42 thru MPSA43

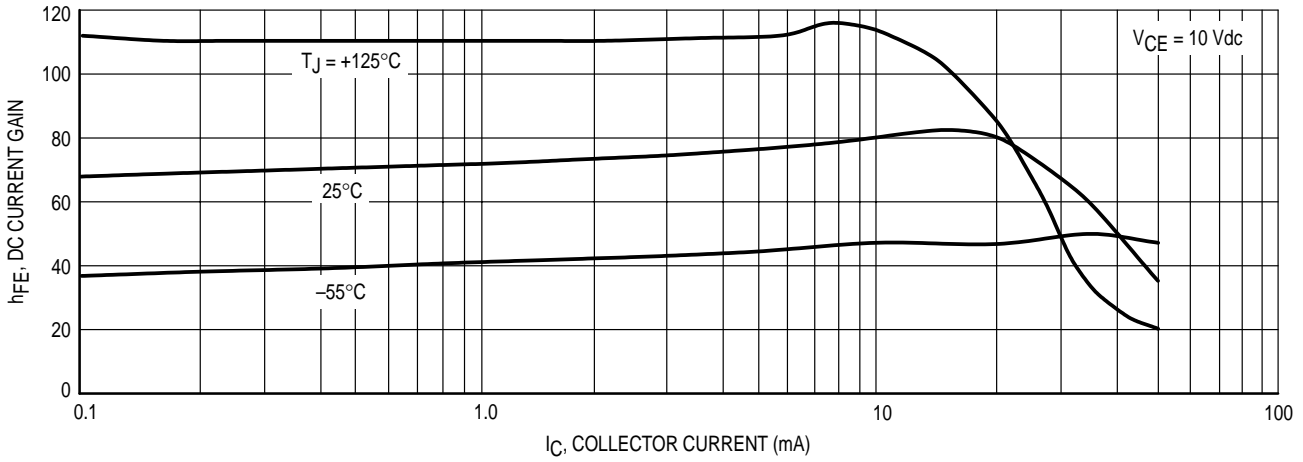


Figure 1. DC Current Gain

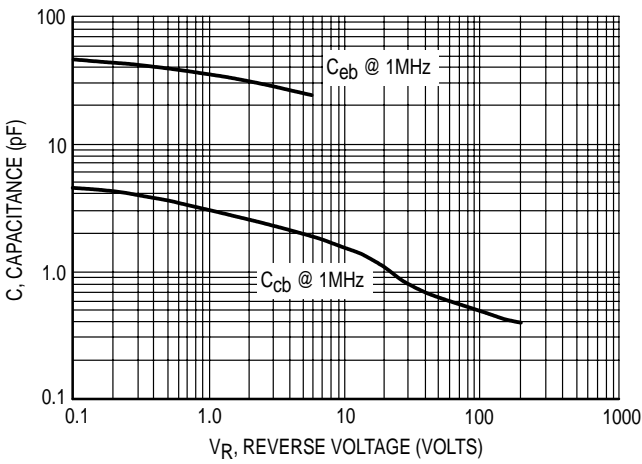


Figure 2. Capacitance

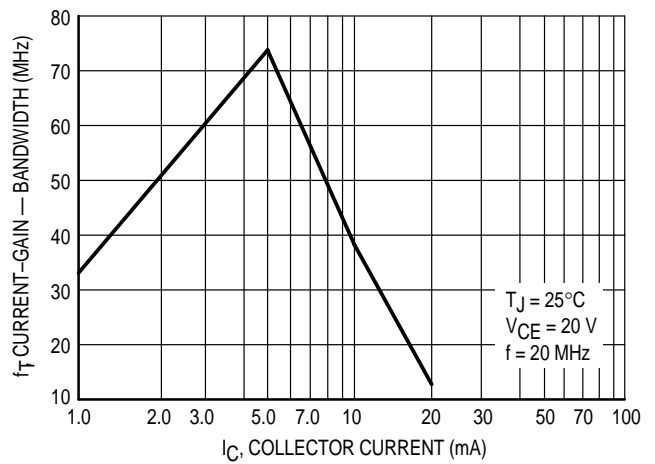


Figure 3. Current-Gain - Bandwidth

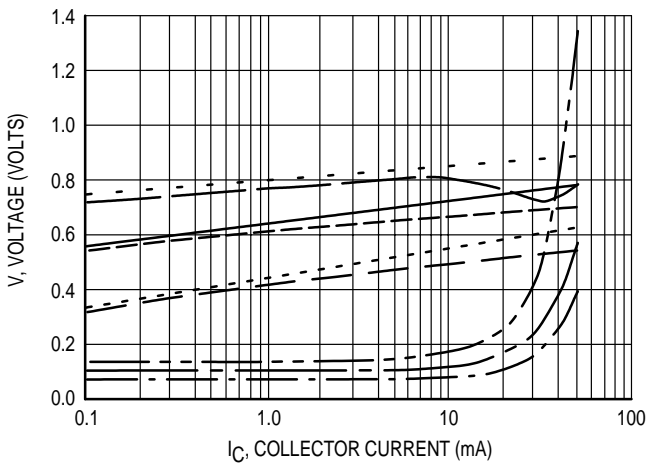


Figure 4. "ON" Voltages

- $V_{CE(sat)}$ @ 25°C, $I_C/I_B = 10$
- $V_{CE(sat)}$ @ 125°C, $I_C/I_B = 10$
- $V_{CE(sat)}$ @ -55°C, $I_C/I_B = 10$
- $V_{BE(sat)}$ @ 25°C, $I_C/I_B = 10$
- $V_{BE(sat)}$ @ 125°C, $I_C/I_B = 10$
- $V_{BE(sat)}$ @ -55°C, $I_C/I_B = 10$
- $V_{BE(on)}$ @ 25°C, $V_{CE} = 10$ V
- $V_{BE(on)}$ @ 125°C, $V_{CE} = 10$ V
- $V_{BE(on)}$ @ -55°C, $V_{CE} = 10$ V



Micro Commercial Components

Ordering Information

Device	Packing
(Part Number)-AP	Tape&Reel;2Kpcs/Box
(Part Number)-BP	Bulk;1Kpcs/Bag

IMPORTANT NOTICE

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. *Micro Commercial Components Corp.* does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold *Micro Commercial Components Corp.* and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.