Features

- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

NPN Silicon High Voltage Transistor

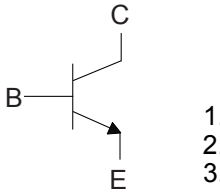
Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55℃ to +150℃
- Storage Temperature Range: -55℃ to +150℃
- Thermal Resistance: 200℃/W Junction to Ambient
- Thermal Resistance: 83.3℃/W Junction to Case

Parameter		Symbol	Rating	Unit
Collector-Base Voltage	MPSA42	V_{CBO}	300	V
	MPSA43		200	
Collector-Emitter Voltage	MPSA42	V_{CEO}	300	V
	MPSA43		200	
Emitter-Base Voltage	MPSA42	V_{EBO}	5	V
	MPSA43		5	
Continuous Collector Current		I_C	300	mA
Power Dissipation @T_A=25°C		P_D	625	mW
			5	mW/℃
Power Dissipation @T_C=25°C		P_D	1.5	W
			12	mW/℃

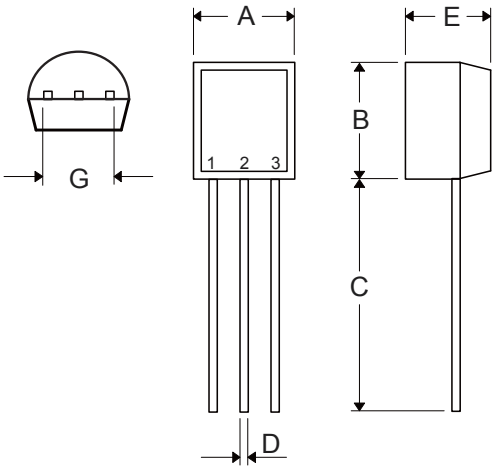
Marking:
MPSA42 ----A42
MPSA43 ----MPSA43

Internal Structure



1.EMITTER
2.BASE
3.COLLECTOR

TO-92



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.169	0.185	4.30	4.70	
B	0.169	0.185	4.30	4.70	
C	0.500	-----	12.70	-----	
D	0.015	0.022	0.38	0.55	
E	0.130	0.146	3.30	3.70	
G	0.095	0.105	2.42	2.67	Straight Lead
	0.173	0.220	4.40	5.60	Bent

Electrical Characteristics @ T_A=25°C Unless Otherwise Specified

Parameter		Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	MPSA42	$V_{(BR)CBO}$	300			V	I_C=100μA, I_E=0
	MPSA43		200			V	
Collector-Emitter Breakdown Voltage*	MPSA42	$V_{(BR)CEO}$	300			V	I_C=1mA, I_B=0
	MPSA43		200				
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	5			V	I_E=10μA, I_C=0
Collector Cutoff Current	MPSA42	I_{CBO}			0.25	μA	V_{CB}=200V, I_E=0
	MPSA43				0.1	μA	V_{CB}=160V, I_E=0
Emitter Cutoff Current	MPSA42	I_{EBO}			0.25	μA	V_{EB}=3V, I_C=0
	MPSA43				0.1	μA	V_{EB}=4V, I_C=0
DC Current Gain*		$h_{FE(1)}$	25				V_{CE}=10V, I_C=1mA
		$h_{FE(2)}$	80		250		V_{CE}=10V, I_C=10mA
		$h_{FE(3)}$	25				V_{CE}=10V, I_C=50mA
Collector-Emitter Saturation Voltage	MPSA42	$V_{CE(sat)}$			0.5	V	I_C=20mA, I_B=2mA
	MPSA43				0.4	V	
Base–Emitter Saturation Voltage		$V_{BE(sat)}$			0.9	V	I_C=20mA, I_B=2mA
Transition Frequency		f_T	50			MHz	V_{CE}=5V, I_C=10mA, f=30MHz
Collector–Base Capacitance	MPSA42	C_{cb}			3	pF	V_{CB}=20V, I_E=0, f=1MHz
	MPSA43				4		

*.Pulse test: Pulse Width≤300μs,Duty Cycle≤2.0%.

Curve Characteristics

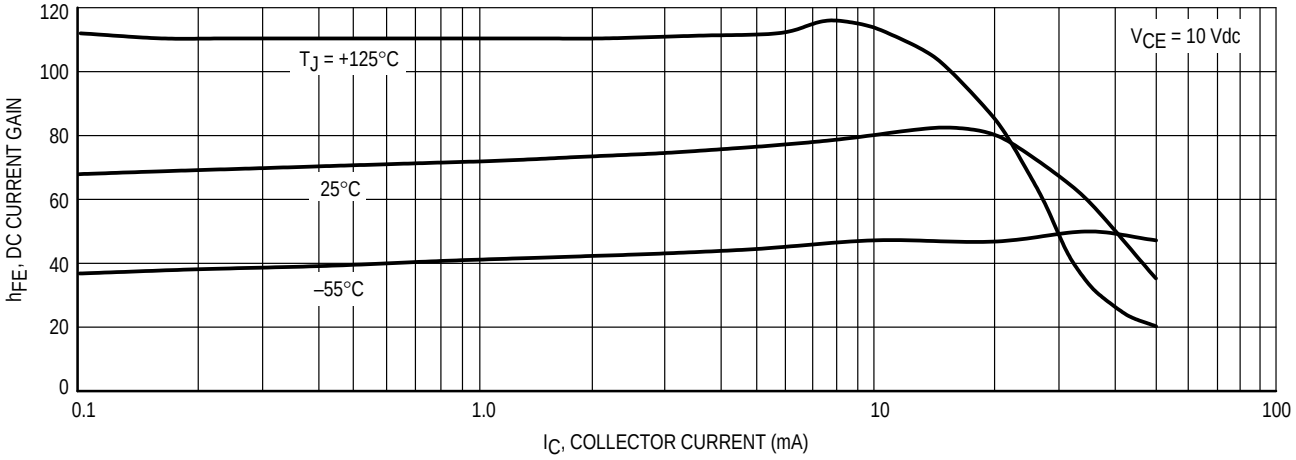


Figure 1. DC Current Gain

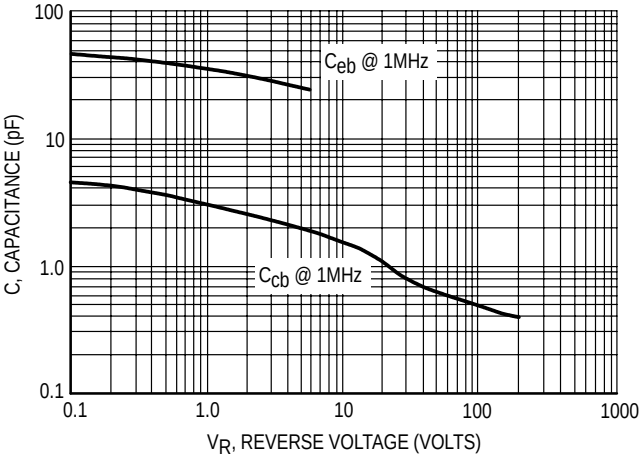


Figure 2. Capacitance

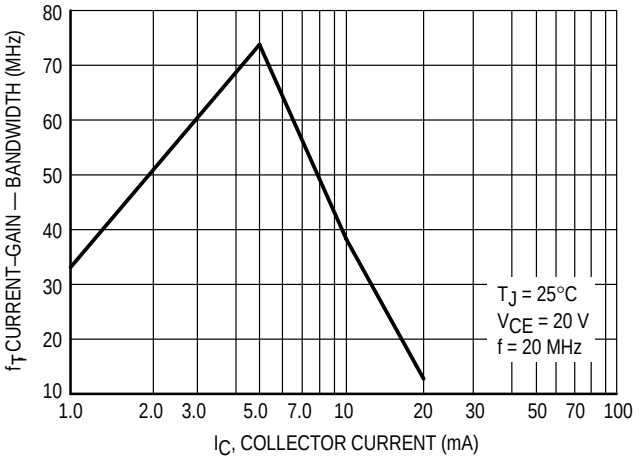
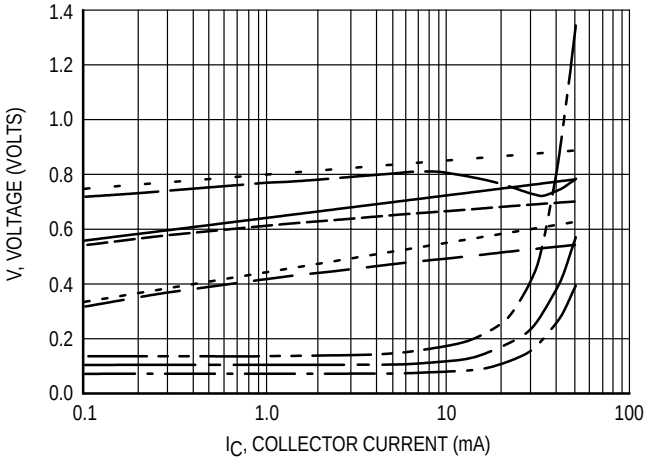


Figure 3. Current–Gain – Bandwidth



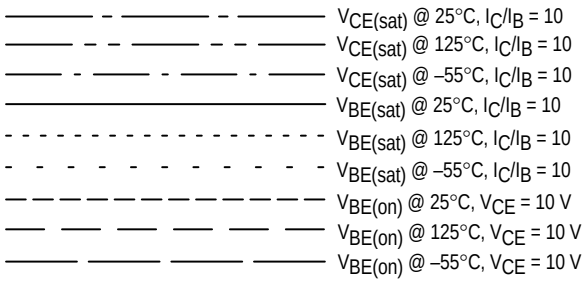


Figure 4. "ON" Voltages

Ordering Information

Device	Packing
Part Number-AP	Ammo Packing: 20Kpcs/Carton
Part Number-BP	Bulk: 100Kpcs/Carton

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-TP-HF