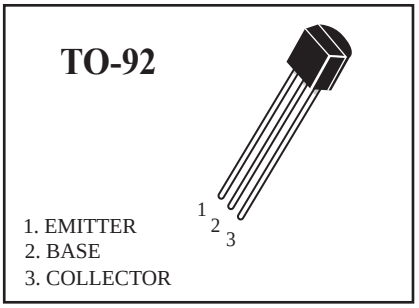
WEITRON

MPSA42

NPN Silicon General Purpose Transistors

Lead(Pb)-Free



MAXIMUM RATINGS* T_A=25℃ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	310	V
V_{CEO}	Collector-Emitter Voltage	305	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	500	mA
T_J, T_{stg}	Junction and Storage Temperature	-55-150	℃
$R_{\Theta JA}$	Thermal Resistance, junction to Ambient	200	℃/mW
$R_{\Theta JC}$	Thermal Resistance, unction to Case	83.3	℃/mW

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

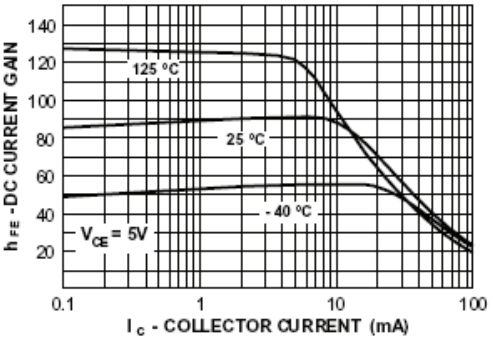
ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	Ic=100uA, I_E=0	310			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	Ic=1mA, I_B=0	305			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA, I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=200V, I_E=0			0.25	μA
Emitter cut-off current	I_{EBO}	V_{EB}=5V, I_C=0			0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=10V, I_C=1mA	60			
	$h_{FE(2)}$	V_{CE}=10V, I_C=10mA	80		250	
	$h_{FE(3)}$	V_{CE}=10V, I_C=30mA	75			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=20mA, I_B=2mA			0.2	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=20mA, I_B=2mA			0.9	V
Transition frequency	f_T	V_{CE}=20V, I_C=10mA,f=30MHz	50			MHz

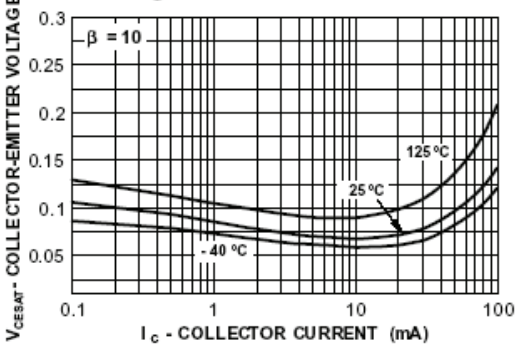
CLASSIFICATION OF $h_{FE(2)}$

Rank	A	B_1	B_2	C
Range	80-100	100-150	150-200	200-250

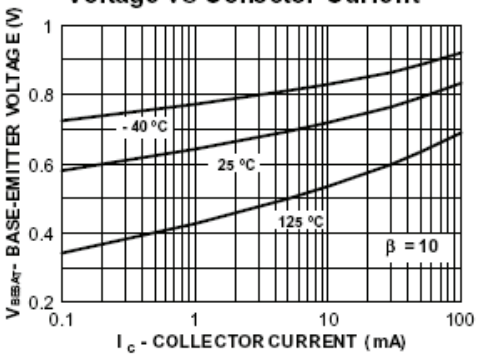
DC Current Gain
vs Collector Current



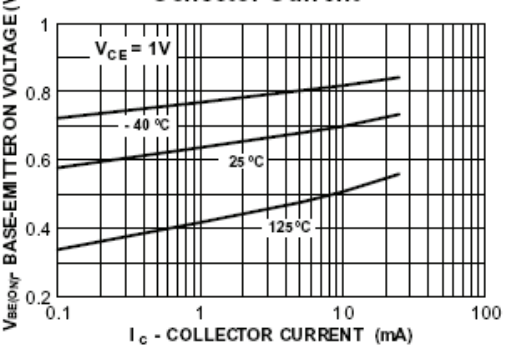
Collector-Emitter Saturation
Voltage vs Collector Current



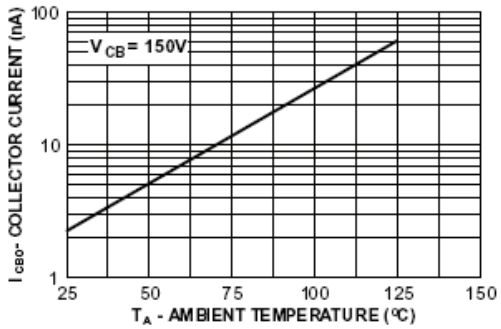
Base-Emitter Saturation
Voltage vs Collector Current



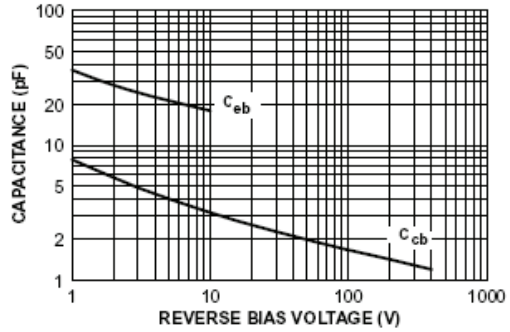
Base-Emitter ON Voltage vs
Collector Current



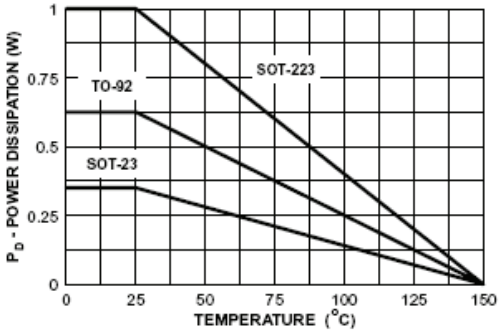
Collector-Cutoff Current
vs Ambient Temperature



Collector-Base and Emitter-Base
Capacitance vs Reverse Bias Voltage

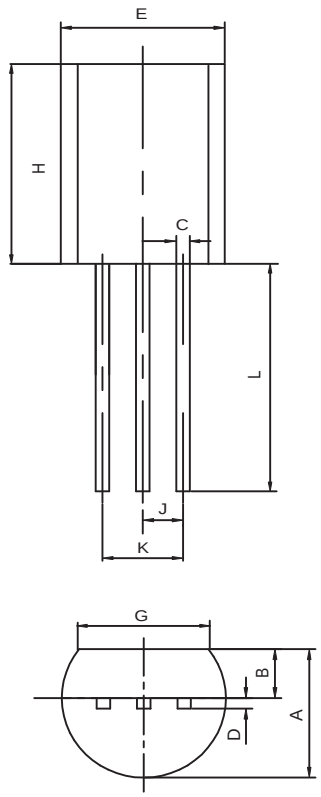


Power Dissipation vs
Ambient Temperature



TO-92 Outline Dimensions

unit:mm



TO-92		
Dim	**Min**	**Max**
A	3.30	3.70
B	1.10	1.40
C	0.38	0.55
D	0.36	0.51
E	4.40	4.70
G	3.43	-
H	4.30	4.70
J	1.270TYP	
K	2.44	2.64
L	14.10	14.50