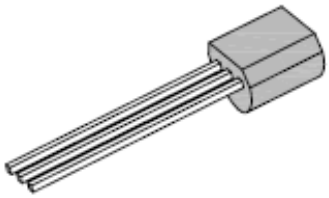
Small Signal Darlington Transistors (NPN)

Features

- NPN Silicon Planar Epitaxial Darlington Transistors
- RoHS Compliance



TO-92

Mechanical Data

Case:	TO-92, Plastic Package
Terminals:	Solderable per MIL-STD-202G, Method 208
Weight:	0.18 gram

Maximum Ratings *(T Ambient=25ºC unless noted otherwise)*

Symbol	Description	MPSA13	MPSA14	Unit
V_{CEO}	Collector-Emitter Voltage	30		V
V_{CBO}	Collector-Base Voltage	30		V
V_{EBO}	Emitter-Base Voltage	10		V
I_C	Collector Current Continuous	500		mA
P_D	Power Dissipation at T_A=25°C	625		mW
	Derate above 25°C	5.0		mW/° C
P_D	Power Dissipation at T_C=25°C	1.5		W
	Derate above 25°C	12		mW/° C
$R_{\theta JA}$	Thermal Resistance Junction to Ambient Air	200		° C/W
$R_{\theta JC}$	Thermal Resistance Junction to Case	83.3		° C/W
T_J ,T_{STG}	Operation and Storage Junction Temperature Range	-55 to +150		° C

Electrical Characteristics *(T Ambient=25°C unless noted otherwise)*

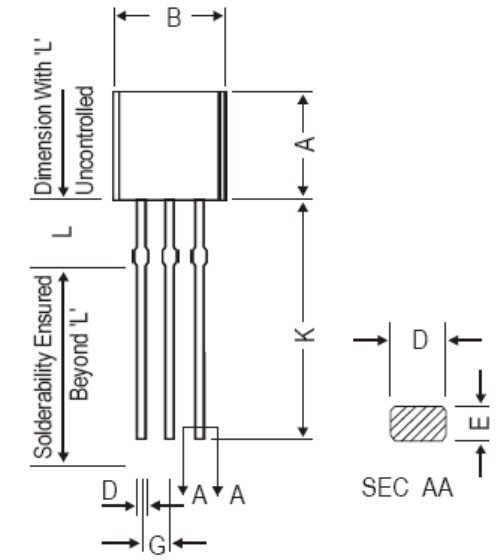
Symbol	Description	MPSA13		MPSA14		Unit	Conditions
		Min.	Max.	Min.	Max.		
V_{CEO}	Collector-Emitter Voltage	30	-	30	-	V	I_C=100μA, I_B=0
I_{CBO}	Collector Cut–Off Current	-	100	-	100	nA	V_{CB}=30V, I_E=0
I_{EBO}	Emitter Cut–Off Current	-	100	-	100	nA	V_{EB}=10V, I_C=0
$V_{CE(sat)}$*	Collector Emitter Saturation Voltage	-	1.5	-	1.5	V	I_C=100mA, I_B=0.1mA
$V_{BE(on)}$*	Base Emitter On Voltage	-	2.0	-	2.0	V	I_C=100mA, V_{CE}=5V
h_{FE}*	D.C. Current Gain	5000	-	10000	-		V_{CE}=5V, I_C=10mA
		10000	-	20000	-		V_{CE}=5V, I_C=100mA
f_T**	Current Gain-Bandwidth Product	125	-	125	-	MHz	V_{CE}=5V, I_C=10mA, f=100MHz

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

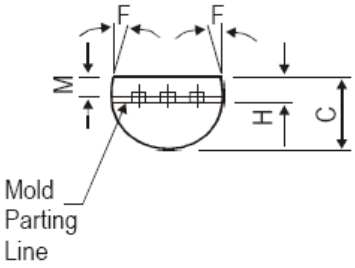
**$f_T = |h_{fe}| * f_{test}$.

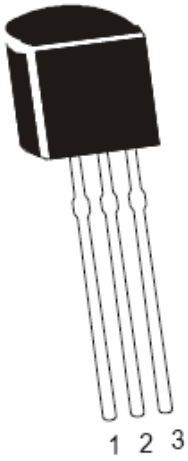
Dimensions in mm

TO-92



DIM	MIN.	MAX.
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5 DEG	
G	1.14	1.40
H	1.20	1.40
K	12.70	—
L	1.982	2.082
M	1.03	1.20





PIN CONFIGURATION
1. EMITTER
2. BASE
3. COLLECTOR

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