

# isc Silicon NPN Darlington Power Transistor

MPSA14

## DESCRIPTION

- With TO-92 packaging
- Very high DC current gain
- Monolithic darlington transistor with integrated antiparallel collector-emitter diode
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

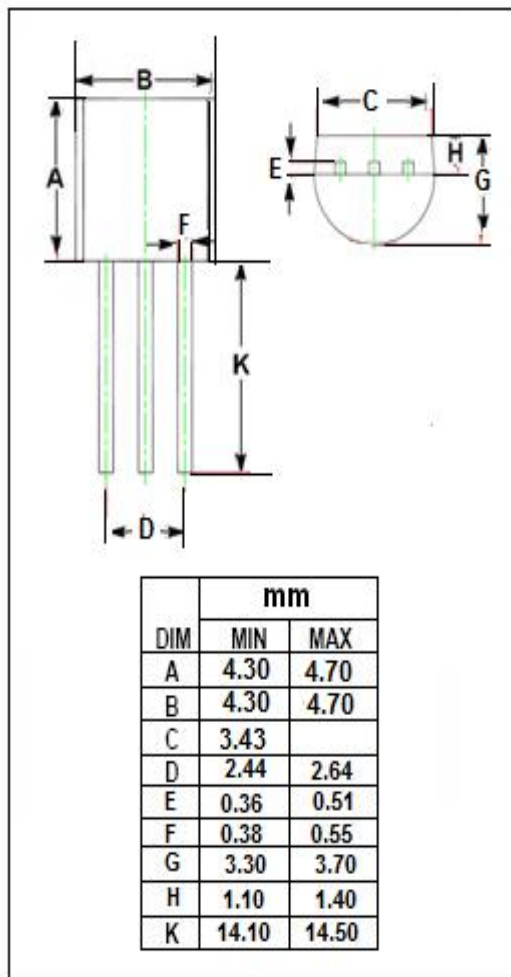
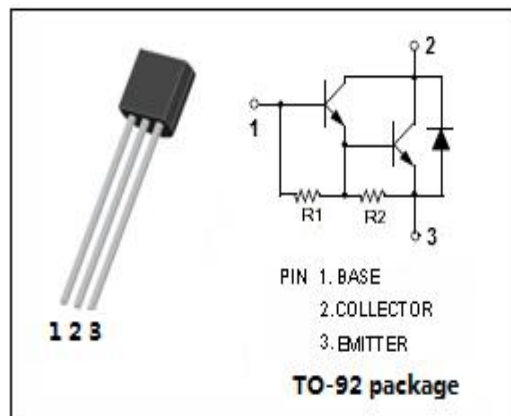
- AC-DC motor control
- Electronic ignition
- Alternator regulator

## ABSOLUTE MAXIMUM RATINGS( $T_a=25^{\circ}\text{C}$ )

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	30	V
$V_{CEO}$	Collector-Emitter Voltage	30	V
$V_{EBO}$	Emitter-Base Voltage	10	V
$I_C$	Collector Current-Continuous	0.5	A
$I_{CM}$	Collector Current-Peak	1.0	A
$P_T$	Total Power Dissipation	1.5	W
$T_j$	Max.Junction Temperature	150	$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^{\circ}\text{C}$

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	83.3	$^{\circ}\text{C/W}$



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## ELECTRICAL CHARACTERISTICS

 $T_c=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=1\text{mA}, I_B=0$	30		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=0.1\text{A}, I_B=0.1\text{mA}$		1.5	V
$V_{BE(on)}$	Base-Emitter on Voltage	$I_C=0.1\text{A}, V_{CE}=5\text{V}$		2.0	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=30\text{V}, I_E=0$		0.1	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=10\text{V}, I_C=0$		0.1	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C=10\text{mA}; V_{CE}=5\text{V}$	10000		
$h_{FE-2}$	DC Current Gain	$I_C=0.1\text{A}; V_{CE}=5\text{V}$	20000		

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