



**MPSA14**

Preliminary

**NPN SILICON TRANSISTOR**

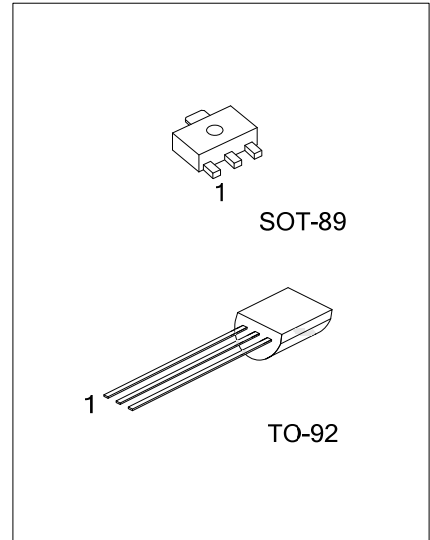
**DARLINGTON TRANSISTOR**

■ DESCRIPTION

The UTC **MPSA14** is a Darlington transistor.

■ FEATURES

- \* Collector-Emitter Voltage:  $V_{CES} = 30V$
- \* Collector Dissipation:  $P_{c(max)} = 625mW$



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MPSA14L-AB3-R	MPSA14G-AB3-R	SOT-89	B	C	E	Tape Reel
MPSA14L-T92-K	MPSA14G-T92-K	TO-92	E	B	C	Bulk
MPSA14L-T92-B	MPSA14G-T92-B	TO-92	E	B	C	Tape Box

<p>MPSA14L-T92-B</p> <p>(1)Packing Type (2)Package Type (3)Lead Free</p>	<p>(1) B: Tape Box, R: Tape Reel, K: Bulk (2) T92: TO-92, AB3: SOPT-89 (3) Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified.)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	30	V
Collector-Emitter Voltage	$V_{CES}$	30	V
Emitter-Base Voltage	$V_{EBO}$	10	V
Collector Dissipation ( $T_a=25^\circ\text{C}$ )	$P_C$	625	mW
Collector Current	$I_C$	500	mA
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ( $T_J=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Emitter Breakdown Voltage	$BV_{CES}$	$I_C=100\mu\text{A}$ , $I_B=0$	30			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=30\text{V}$ , $I_E=0$			100	nA
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=10\text{V}$ , $I_C=0$			100	nA
DC Current Gain	$h_{FE}$	$V_{CE}=5\text{V}$ , $I_C=100\text{mA}$	20000			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100\text{mA}$ , $I_B=0.1\text{mA}$			1.5	V
Base-Emitter on Voltage	$V_{BE(on)}$	$V_{CE}=5\text{V}$ , $I_C=100\text{mA}$			2.0	V
Current Gain Bandwidth Product	$f_T$	$V_{CE}=5\text{V}$ , $I_C=10\text{mA}$ , $f=100\text{MHz}$	125			MHz

Note: Pulse test: Pulse Width<300 $\mu\text{s}$ , Duty Cycle=2%

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