



# MPSA92/93

## PNP SILICON TRANSISTOR

### HIGH VOLTAGE PNP TRANSISTOR

■ DESCRIPTION

The UTC **MPSA92/93** are high voltage PNP transistors, designed for telephone signal switching and for high voltage amplifier.

■ FEATURES

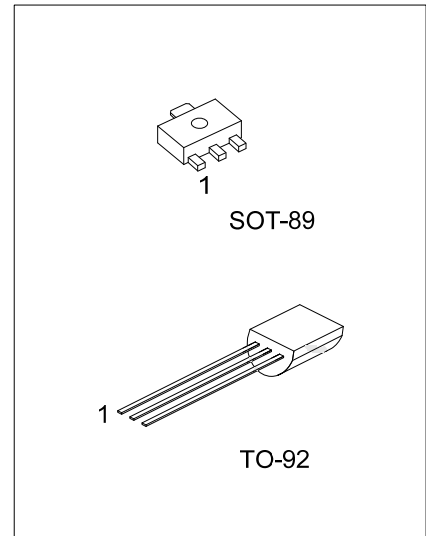
\* High Collector-Emitter voltage:

– $V_{CE0}$  = -300V (UTC **MPSA92**)

– $V_{CE0}$  = -200V (UTC **MPSA93**)

\* Collector Dissipation:

– $P_C$ (max) = 625mW



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MPSA92L-AB3-R	MPSA92G-AB3-R	SOT-89	B	C	E	Tape Reel
MPSA93L-AB3-R	MPSA93G-AB3-R	SOT-89	B	C	E	Tape Reel
MPSA92L-T92-B	MPSA92G-T92-B	TO-92	E	B	C	Tape Box
MPSA92L-T92-K	MPSA92G-T92-K	TO-92	E	B	C	Bulk
MPSA92L-T92-R	MPSA92G-T92-R	TO-92	E	B	C	Tape Reel
MPSA93L-T92-B	MPSA93G-T92-B	TO-92	E	B	C	Tape Box
MPSA93L-T92-K	MPSA93G-T92-K	TO-92	E	B	C	Bulk
MPSA93L-T92-R	MPSA93G-T92-R	TO-92	E	B	C	Tape Reel

Note: Pin Assignment: B: Base C: Collector E: Emitter

<p>MPSA92L-AB3-R</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel</p> <p>(2) AB3: SOT-89, T92: TO-92</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATING ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage	MPSA92	$V_{CBO}$	-300	V
	MPSA93		-200	V
Collector-Emitter Voltage	MPSA92	$V_{CEO}$	-300	V
	MPSA93		-200	V
Emitter-Base Voltage		$V_{EBO}$	-5	V
Collector Current		$I_C$	-500	mA
Collector Dissipation	SOT-89	$P_C$	1	W
	TO-92		1.5	W
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.

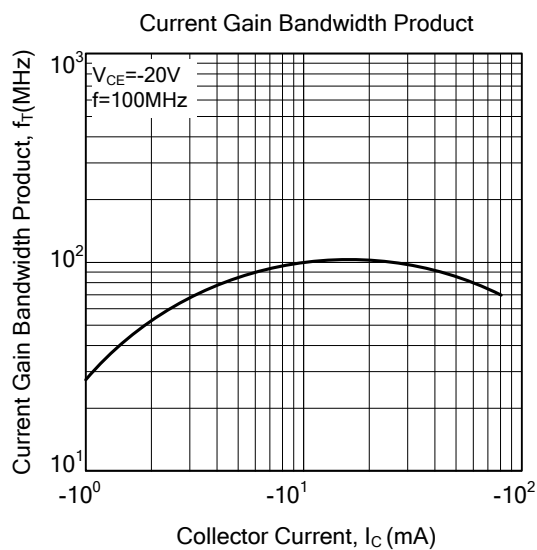
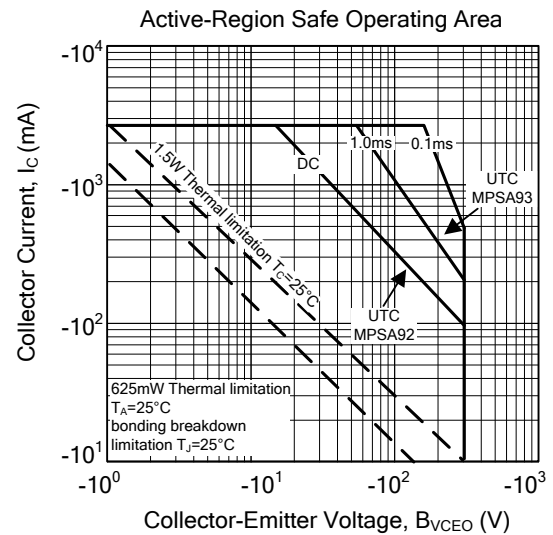
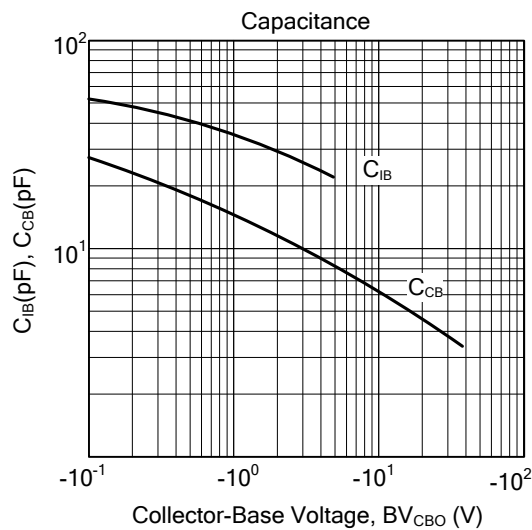
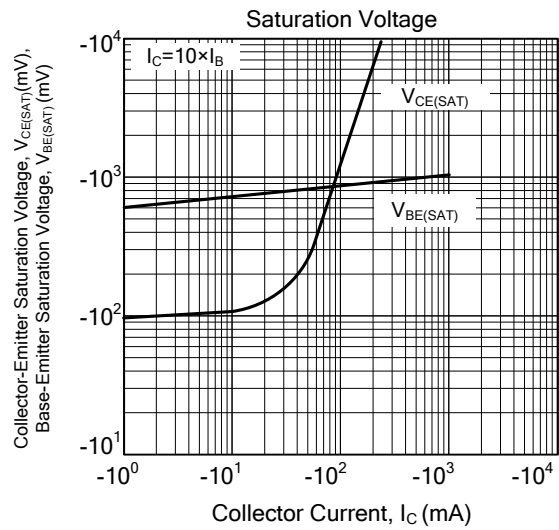
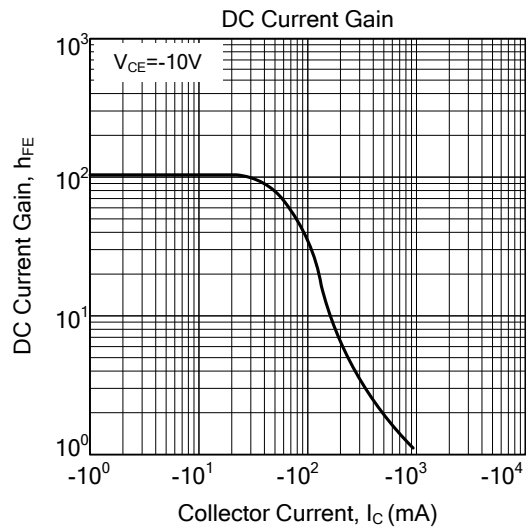
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>							
Collector-Base Breakdown Voltage	MPSA92	$BV_{CBO}$	$I_C=-100\mu\text{A}, I_E=0$	-300			V
	MPSA93			-200			V
Collector-Emitter Breakdown Voltage	MPSA92	$BV_{CEO}$	$I_C=-1\text{mA}, I_B=0$	-300			V
	MPSA93			-200			V
Emitter-Base Breakdown Voltage		$BV_{EBO}$	$I_E=-100\mu\text{A}, I_C=0$	-5			V
Collector Cut-Off Current	MPSA92	$I_{CBO}$	$V_{CB}=-200\text{V}, I_E=0$			-0.25	$\mu\text{A}$
	MPSA93					-0.25	$\mu\text{A}$
Emitter Cut-Off Current		$I_{EBO}$	$V_{EB}=-3\text{V}, I_C=0$			-0.10	$\mu\text{A}$
<b>ON CHARACTERISTICS</b>							
DC Current Gain(note)		$h_{FE}$	$V_{CE}=-10\text{V}, I_C=-1\text{mA}$ $V_{CE}=-10\text{V}, I_C=-10\text{mA}$ $V_{CE}=-10\text{V}, I_C=-30\text{mA}$	60			
				80			
				80			
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	$I_C=-20\text{mA}, I_B=-2\text{mA}$			-0.5	V
Base-Emitter Saturation Voltage		$V_{BE(SAT)}$	$I_C=-20\text{mA}, I_B=-2\text{mA}$			-0.90	V
<b>SMALL SIGNAL CHARACTERISTICS</b>							
Current Gain Bandwidth Product		$f_T$	$V_{CE}=-20\text{V}, I_C=-10\text{mA}, f=100\text{MHz}$	50			MHz
Output Capacitance	MPSA92	$C_{ob}$	$V_{CB}=-20\text{V}, I_E=0, f=1\text{MHz}$			6	pF
	MPSA93					8	pF

Note: Pulse test:  $P_W < 300\mu\text{s}$ , Duty Cycle  $< 2\%$ ,  $V_{CE(SAT)} < 200\text{mV}$

## TYPICAL CHARACTERISTICS



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