



MPSA42/43

NPN SILICON TRANSISTOR

HIGH VOLTAGE TRANSISTOR

DESCRIPTION

The UTC MPSA42/43 are high voltage transistors, designed for telephone switch and high voltage switch.

FEATURES

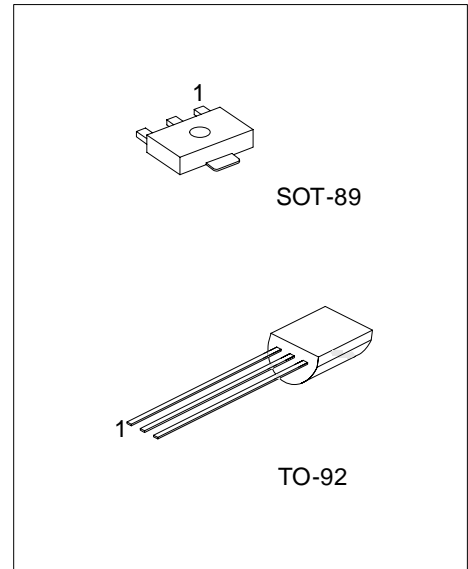
*Collector-Emitter voltage:

$V_{CE0}=300V$ (UTC MPSA42)

$V_{CE0}=200V$ (UTC MPSA43)

*High current gain

*Complement to UTC MPSA92/93



*Pb-free plating product number: MPSA42L
MPSA43L

ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
MPSA42-AB3-R	MPSA42L-AB3-R	SOT-89	B	C	E	Tape Reel
MPSA42-T92-B	MPSA42L-T92-B	TO-92	E	B	C	Tape Box
MPSA42-T92-K	MPSA42L-T92-K	TO-92	E	B	C	Bulk
MPSA43-AB3-R	MPSA43L-AB3-R	SOT-89	B	C	E	Tape Reel
MPSA43-T92-B	MPSA43L-T92-B	TO-92	E	B	C	Tape Box
MPSA43-T92-K	MPSA43L-T92-K	TO-92	E	B	C	Bulk

<p>MPSA42L-AB3-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Plating</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel</p> <p>(2) AB3: SOT-89, T92: TO-92</p> <p>(3) L: Lead Free Plating Blank: Pb/Sn</p>
---	---

■ ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage	MPSA42	V_{CBO}	300	V
	MPSA43		200	V
Collector-Emitter Voltage	MPSA42	V_{CEO}	300	V
	MPSA43		200	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current		I_C	500	mA
Collector Dissipation ($T_a=25^\circ\text{C}$)	SOT-89	P_C	500	mW
	TO-92		625	mW
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-Base Breakdown Voltage	MPSA42	BV_{CBO}	$I_C=100\mu\text{A}, I_E=0$	300			V
	MPSA43			200			
Collector-Emitter Breakdown Voltage	MPSA42	BV_{CEO}	$I_C=1\text{mA}, I_B=0$	300			V
	MPSA43			200			
Emitter-Base Breakdown Voltage		BV_{EBO}	$I_E=100\mu\text{A}, I_C=0$	6			V
Collector Cut-Off Current	MPSA42	I_{CBO}	$V_{CB}=200\text{V}, I_E=0$			100	nA
	MPSA43		$V_{CB}=160\text{V}, I_E=0$			100	
Emitter Cut-Off Current	MPSA42	I_{EBO}	$V_{BE}=6\text{V}, I_C=0$			100	nA
	MPSA43		$V_{BE}=4\text{V}, I_C=0$			100	
DC Current Gain		h_{FE}	$V_{CE}=10\text{V}, I_C=1\text{mA}$	80			
			$V_{CE}=10\text{V}, I_C=10\text{mA}$	80		300	
			$V_{CE}=10\text{V}, I_C=30\text{mA}$	80			
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	$I_C=20\text{mA}, I_B=2\text{mA}$			0.2	V
Base-Emitter Saturation Voltage		$V_{BE(SAT)}$	$I_C=20\text{mA}, I_B=2\text{mA}$			0.90	V
Current Gain Bandwidth Product		f_T	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	50			MHz
Collector Base Capacitance	MPSA42	C_{cb}	$V_{CB}=20\text{V}, I_E=0, f=1\text{MHz}$			3	pF
	MPSA43					4	pF

TYPICAL CHARACTERISTICS

Fig.1 DC Current Gain

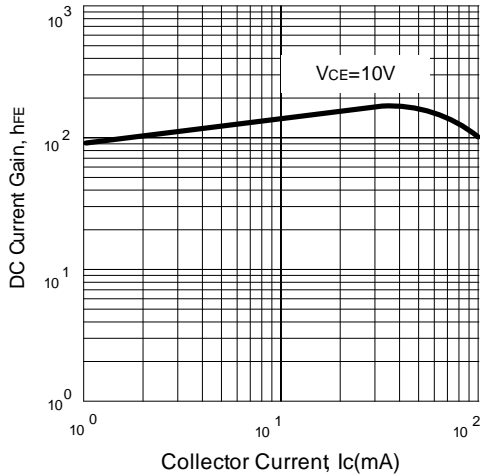


Fig.2 Saturation Voltage

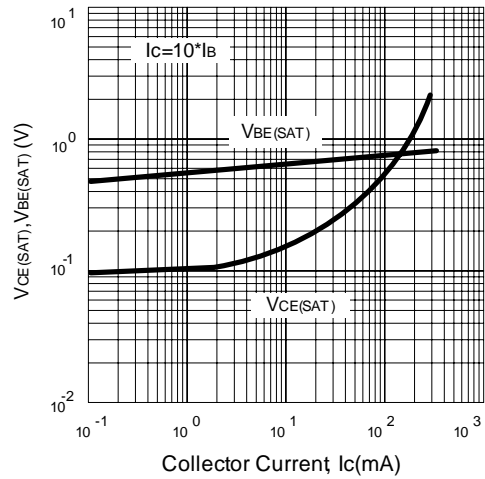


Fig.3 Capacitance

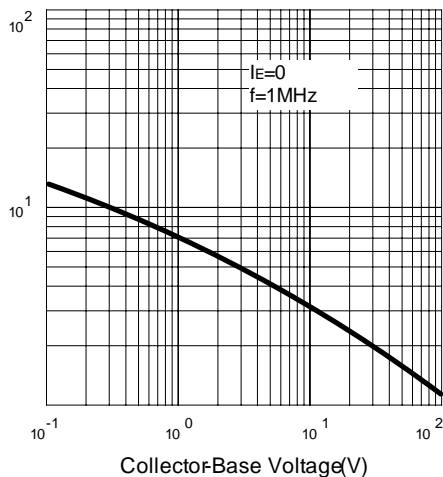
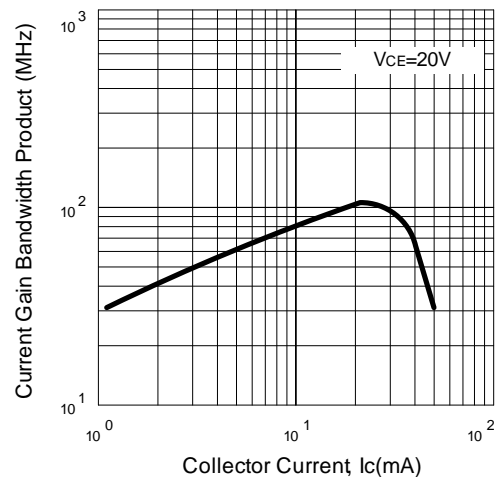


Fig.4 Current Gain Bandwidth Product



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.