



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

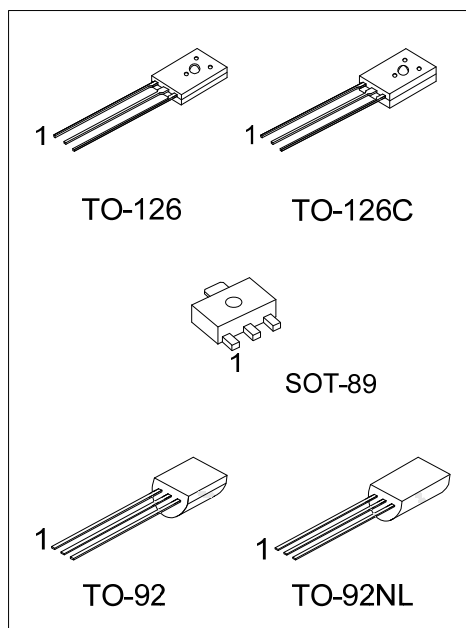
*Collector-Emitter voltage:

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

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

*High current gain

*Complement to UTC MPSA92/93



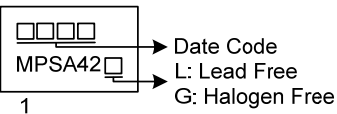
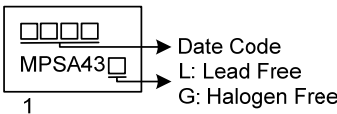
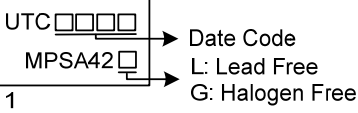
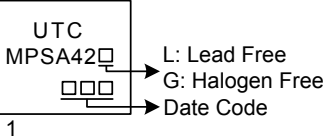
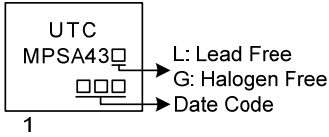
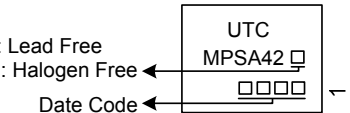
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MPSA42L-AB3-R	MPSA42G-AB3-R	SOT-89	B	C	E	Tape Reel
MPSA42L-T60-K	MPSA42G-T60-K	TO-126	E	C	B	Bulk
MPSA42L-T6C-K	MPSA42G-T6C-K	TO-126C	E	C	B	Bulk
MPSA42L-T92-B	MPSA42G-T92-B	TO-92	E	B	C	Tape Box
MPSA42L-T92-K	MPSA42G-T92-K	TO-92	E	B	C	Bulk
MPSA42L-T9N-B	MPSA42G-T9N-B	TO-92NL	E	C	B	Tape Box
MPSA42L-T9N-K	MPSA42G-T9N-K	TO-92NL	E	C	B	Bulk
MPSA43L-AB3-R	MPSA43G-AB3-R	SOT-89	B	C	E	Tape Reel
MPSA43L-T92-B	MPSA43G-T92-B	TO-92	E	B	C	Tape Box
MPSA43L-T92-K	MPSA43G-T92-K	TO-92	E	B	C	Bulk

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

	(1)Packing Type	(1) B: Tape Box, K: Bulk, R: Tape Reel
	(2)Package Type	(2) AB3: SOT-89, T60: TO-126, T6C: TO-126C T92: TO-92, T9N: TO-92NL
	(3)Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

MARKING

Package	MPSA42	MPSA43
SOT-89		
TO-126 TO-126C		—
TO-92		
TO-92NL		—

■ **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-126/TO-126C		1000	mW
	TO-92/TO-92NL		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.

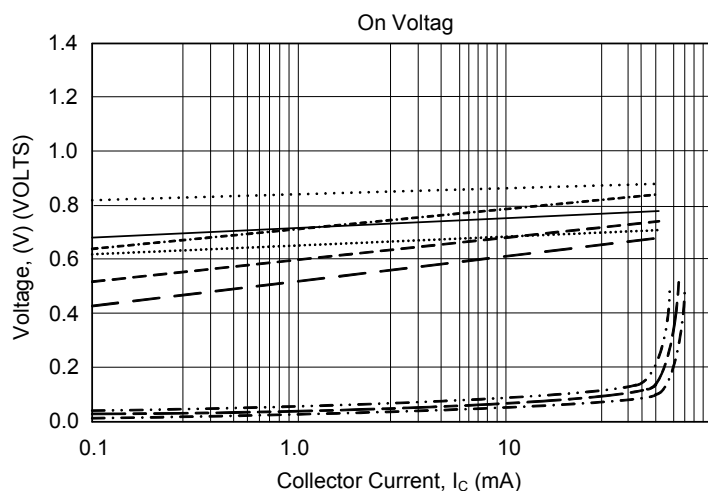
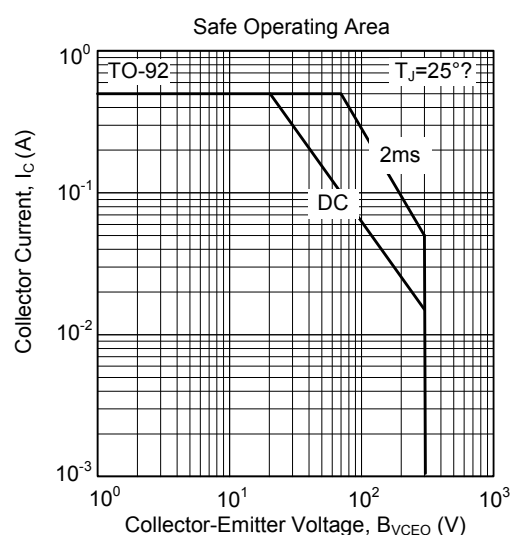
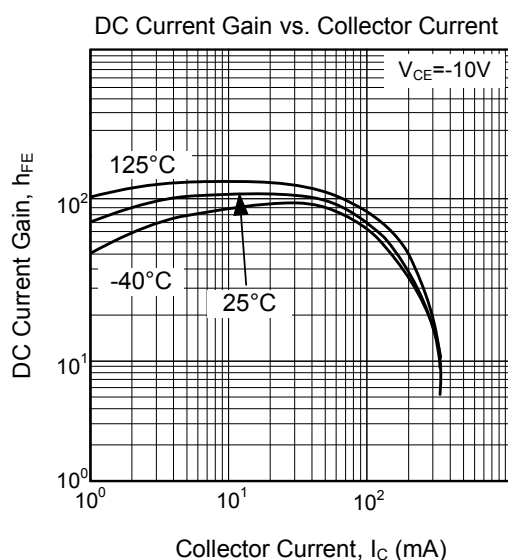
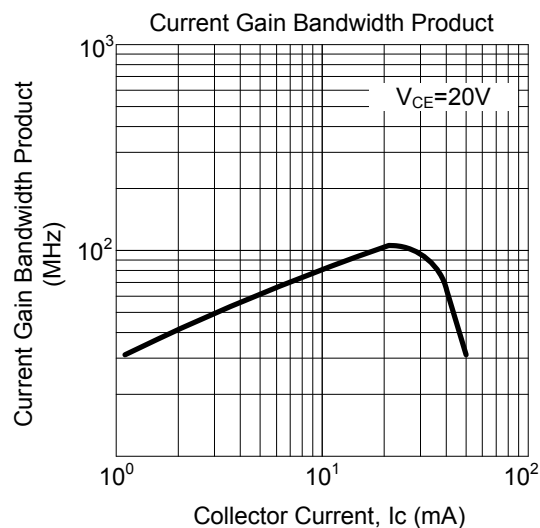
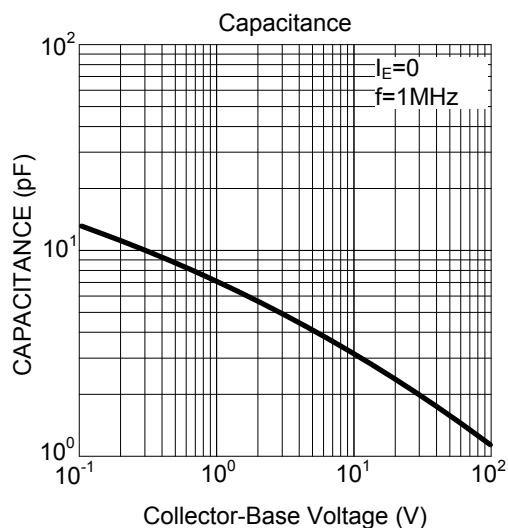
■ **THERMAL DATA**

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-89	θ_{JA}	250	$^\circ\text{C/W}$
	TO-126/TO-126C		125	$^\circ\text{C/W}$
	TO-92/TO-92NL		200	$^\circ\text{C/W}$
Junction to Case	SOT-89	θ_{JC}	43	$^\circ\text{C/W}$
	TO-126/TO-126C		12.5	$^\circ\text{C/W}$
	TO-92/TO-92NL		83.3	$^\circ\text{C/W}$

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

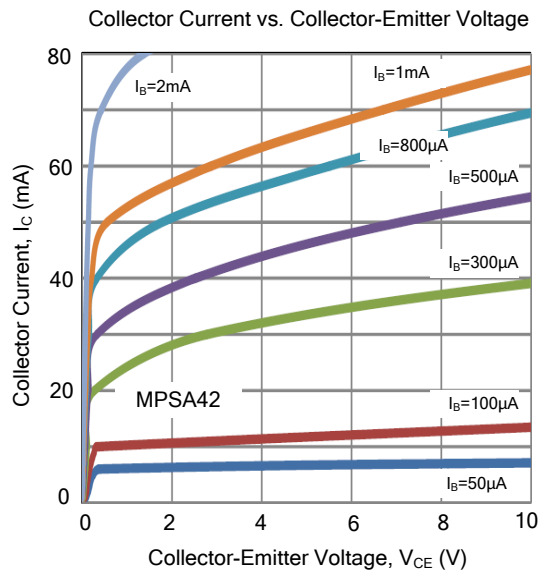
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	MPSA42	BV _{CBO}	I _C =100μA, I _E =0	300			V
	MPSA43			200			V
Collector-Emitter Breakdown Voltage	MPSA42	BV _{CEO}	I _C =1mA, I _B =0	300			V
	MPSA43			200			V
Emitter-Base Breakdown Voltage		BV _{EBO}	I _E =100μA, I _C =0	6			V
Collector Cut-Off Current	MPSA42	I _{CBO}	V _{CB} =200V, I _E =0			100	nA
	MPSA43		V _{CB} =160V, I _E =0			100	nA
Emitter Cut-Off Current	MPSA42	I _{EBO}	V _{EB} =6V, I _C =0			100	nA
	MPSA43		V _{EB} =4V, I _C =0			100	nA
DC Current Gain		h _{FE}	V _{CE} =10V, I _C =1mA V _{CE} =10V, I _C =10mA V _{CE} =10V, I _C =30mA	80 80 80		300	
Collector-Emitter Saturation Voltage		V _{CE(SAT)}	I _C =20mA, I _B =2mA			0.2	V
Base-Emitter Saturation Voltage		V _{BE(SAT)}	I _C =20mA, I _B =2mA			0.90	V
Current Gain Bandwidth Product		f _T	V _{CE} =20V, I _C =10mA, f=100MHz	50			MHz
Collector Base Capacitance	MPSA42	C _{cb}	V _{CB} =20V, I _E =0, f=1MHz			3	pF
	MPSA43					4	pF

TYPICAL CHARACTERISTICS



- $V_{CE(SAT)}$ @ 25°C
- · - · $V_{CE(SAT)}$ @ 125°C
- · - · $V_{CE(SAT)}$ @ -40°C
- $V_{CE(SAT)}$ @ 25°C
- · - · $V_{CE(SAT)}$ @ 125°C
- · - · $V_{CE(SAT)}$ @ -40°C
- · - · $V_{BE(ON)}$ @ 25°C, $V_{CE}=10\text{V}$
- · - · $V_{BE(ON)}$ @ 125°C, $V_{CE}=10\text{V}$
- · - · $V_{BE(ON)}$ @ -40°C, $V_{CE}=10\text{V}$

■ TYPICAL CHARACTERISTICS



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