



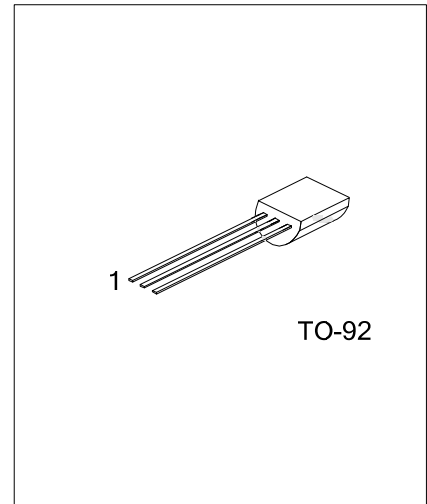
## MPSA06

## NPN SILICON TRANSISTOR

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#### FEATURES

- \* Collector-emitter voltage:  $V_{CE0}=80V$
- \* Collector dissipation:  $P_D=625mW$



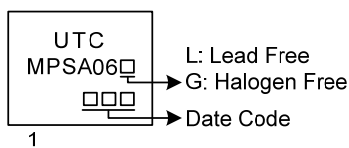
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MPSA06L-T92-B	MPSA06G-T92-B	TO-92	E	B	C	Tape Box
MPSA06L-T92-K	MPSA06G-T92-K	TO-92	E	B	C	Bulk

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

<p>MPSA06G-T92-B</p> <ul style="list-style-type: none"> <li>(1) Packing Type</li> <li>(2) Package Type</li> <li>(3) Green Package</li> </ul>	<ul style="list-style-type: none"> <li>(1) B: Tape Box, K: Bulk</li> <li>(2) T92: TO-92</li> <li>(3) G: Halogen Free and Lead Free, L: Lead Free</li> </ul>
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#### MARKING



1

■ ABSOLUTE MAXIMUM RATING ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	80	V
Collector-Emitter Voltage	$V_{CEO}$	80	V
Emitter-Base Voltage	$V_{EBO}$	4	V
Collector Current - Continuous	$I_C$	500	mA
Total device Dissipation, @ $T_A=25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	625 5	mW mW/ $^\circ\text{C}$
Total device Dissipation, @ $T_C=25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	1500 12	mW mW/ $^\circ\text{C}$
Junction Temperature	$T_J$	+125	$^\circ\text{C}$
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	$\theta_{JA}$	200	$^\circ\text{C}/\text{W}$
Junction-to-Case	$\theta_{JC}$	83.3	$^\circ\text{C}/\text{W}$

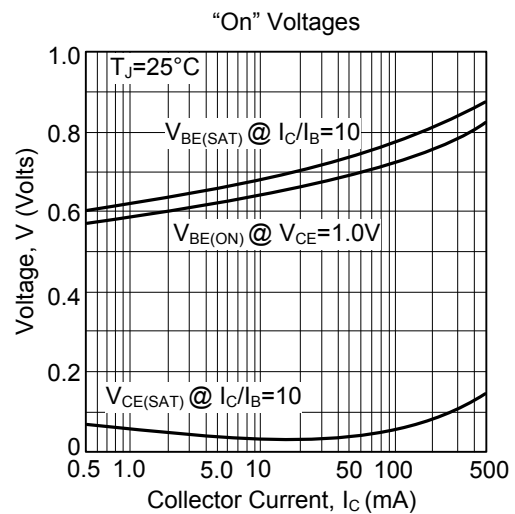
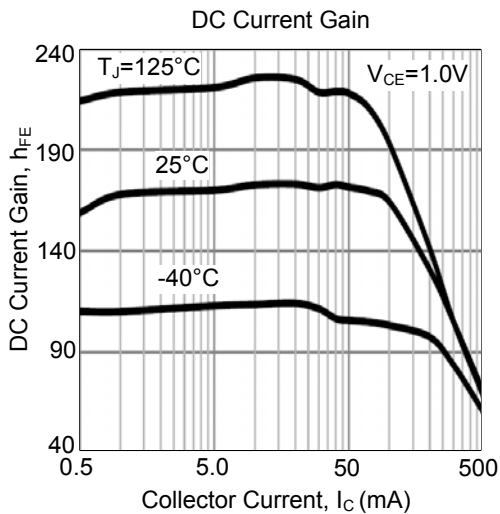
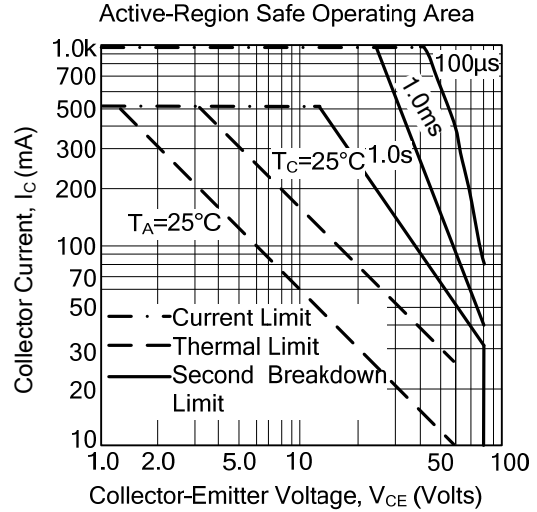
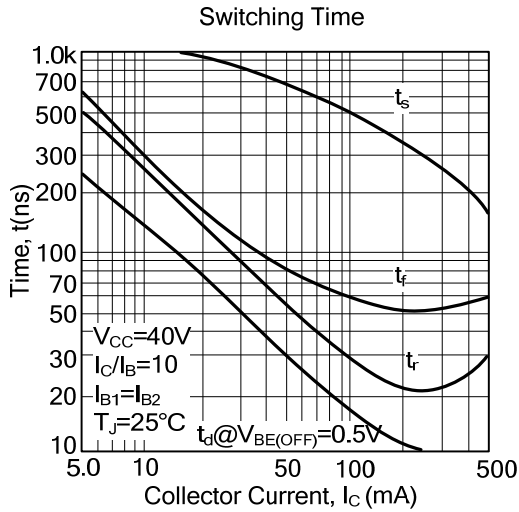
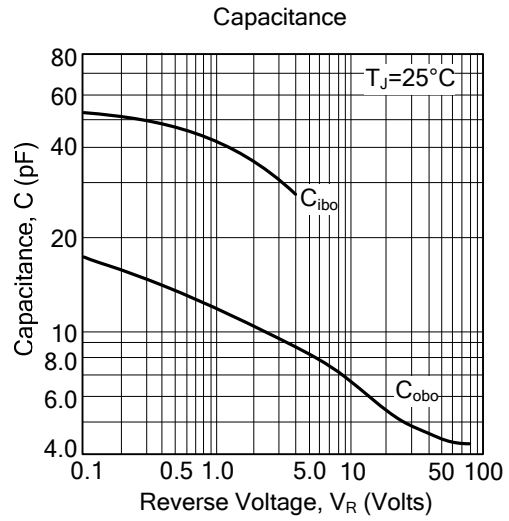
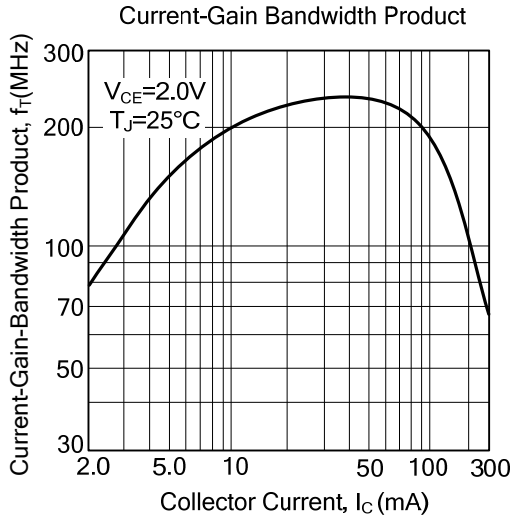
■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Collector-Emitter Breakdown Voltage (Note 1)	$BV_{CEO}$	$I_C=1.0\text{mA}$ , $I_B=0$	80			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=100\mu\text{A}$ , $I_C=0$	4			V
Collector Cutoff Current	$I_{CEO}$	$V_{CE}=60\text{V}$ , $I_B=0$			0.1	$\mu\text{A}$
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=80\text{V}$ , $I_E=0$			0.1	$\mu\text{A}$
<b>ON CHARACTERISTICS</b>						
Dc Current Gain	$h_{FE}$	$I_C=10\text{mA}$ , $V_{CE}=1\text{V}$	100			
		$I_C=100\text{mA}$ , $V_{CE}=1\text{V}$	100			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=100\text{mA}$ , $I_B=10\text{mA}$			0.25	V
Base-Emitter On Voltage	$V_{BE(ON)}$	$I_C=100\text{mA}$ , $V_{CE}=1\text{V}$			1.2	V
<b>SMALL-SIGNAL CHARACTERISTICS</b>						
Current Gain Bandwidth Product (Note 2)	$f_T$	$I_C=10\text{mA}$ , $V_{CE}=2\text{V}$ , $f=100\text{MHz}$	100			MHz

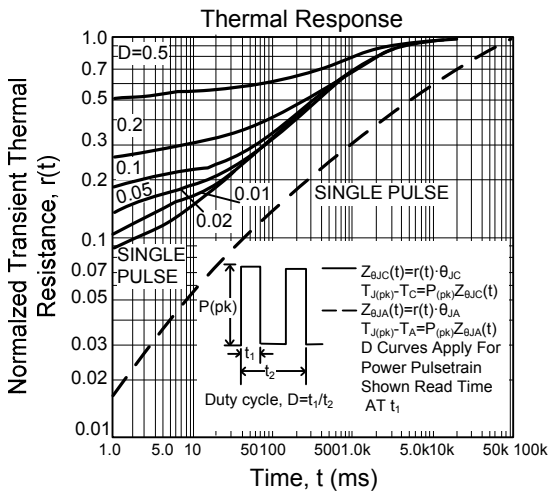
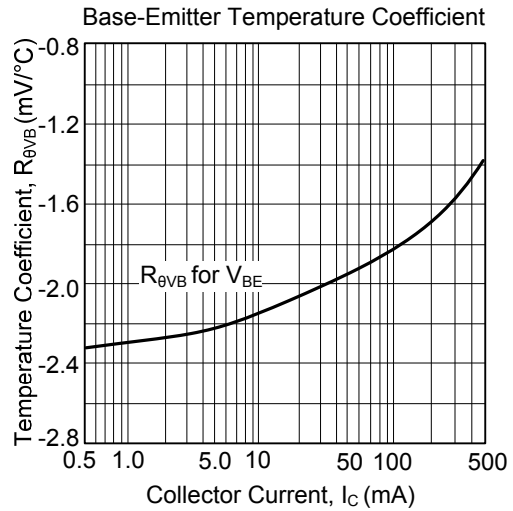
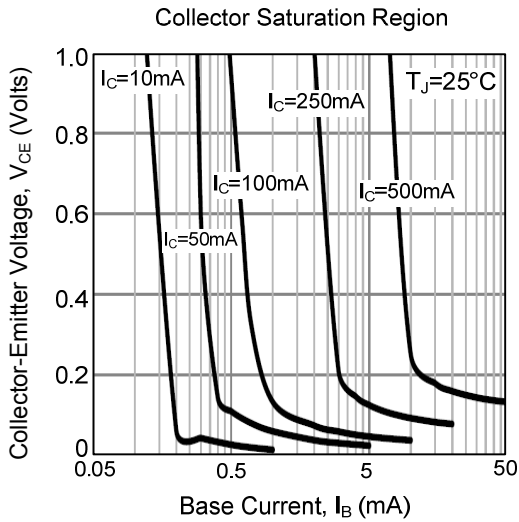
Notes: 1. Pulse test:  $P_W \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

2.  $f_T$  is defined as the frequency at which  $|h_{fe}|$  extrapolates to unity.

## TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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