



# UNISONIC TECHNOLOGIES CO., LTD

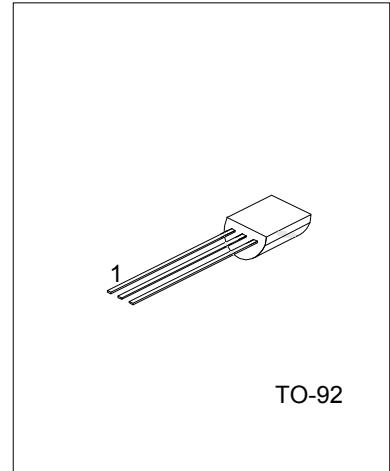
## MPSA56

## PNP SILICON TRANSISTOR

### PNP MPSA56

#### ■ 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	
MPSA56L-T92-B	MPSA56G-T92-B	TO-92	E	B	C	Tape Box
MPSA56L-T92-K	MPSA56G-T92-K	TO-92	E	B	C	Bulk

<p>MPSA56L-T92-B</p> <ul style="list-style-type: none"> <li>(1)Packing Type</li> <li>(2)Package Type</li> <li>(3)Lead Free</li> </ul>	<ul style="list-style-type: none"> <li>(1) B: Tape Box, K: Bulk</li> <li>(2) T92: TO-92</li> <li>(3) L: Lead Free, G:Halogen Free</li> </ul>
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■ 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	$T_A=25^\circ\text{C}$	$P_D$	625	mW
Linear Derating Factor above			5	mW/ $^\circ\text{C}$
Total device Dissipation	$T_C=25^\circ\text{C}$	$P_D$	1500	mW
Linear Derating Factor above			12	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 CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$\theta_{JA}$	200	$^\circ\text{C}/\text{W}$
Junction to Case	$\theta_{JC}$	83.3	

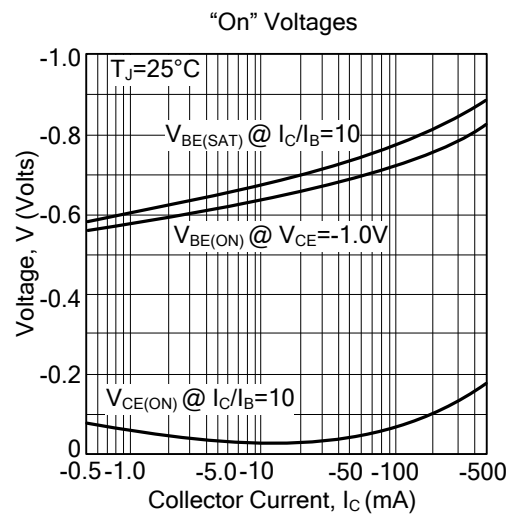
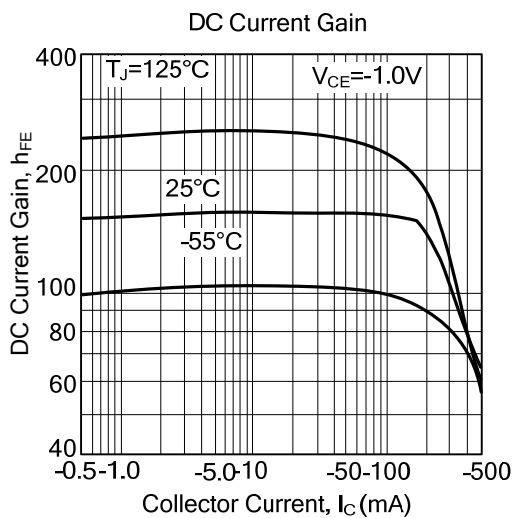
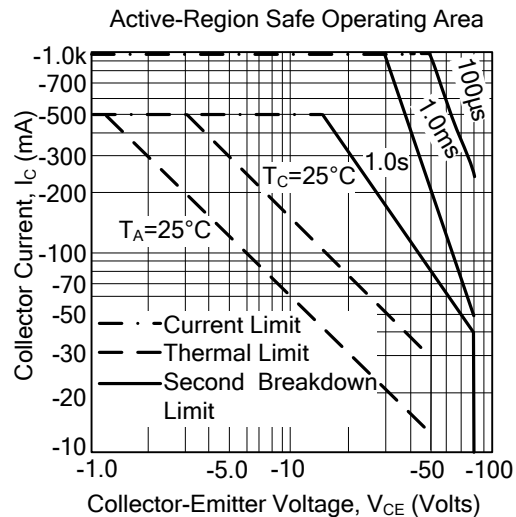
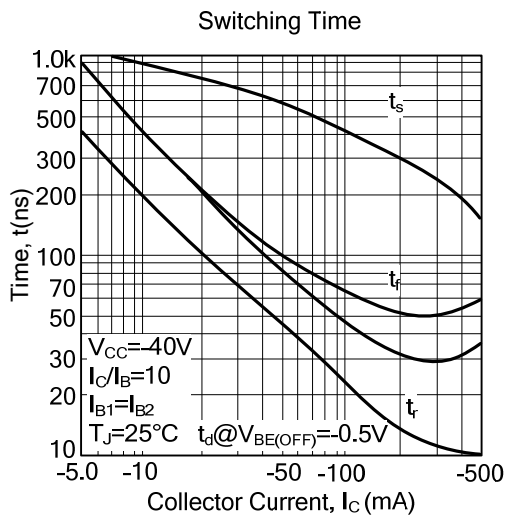
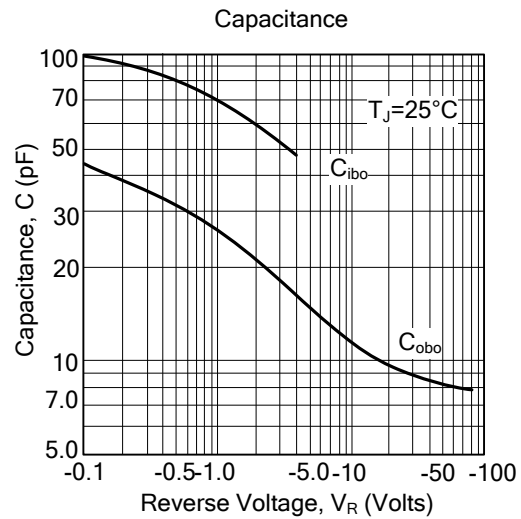
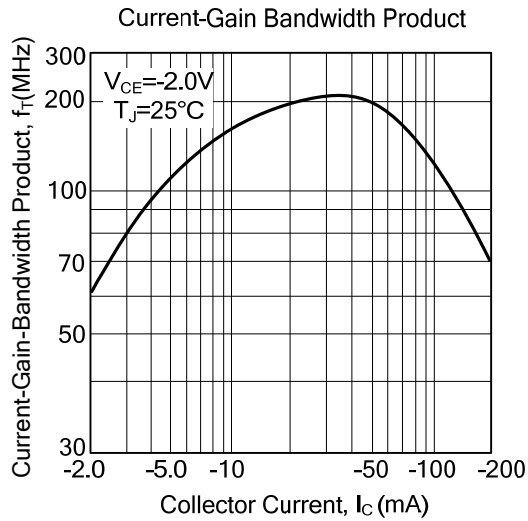
■ ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ , unless otherwise specified)

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)	$f_T$	$I_C=-100\text{mA}, V_{CE}=-1\text{V}, f=100\text{MHz}$	50			MHz

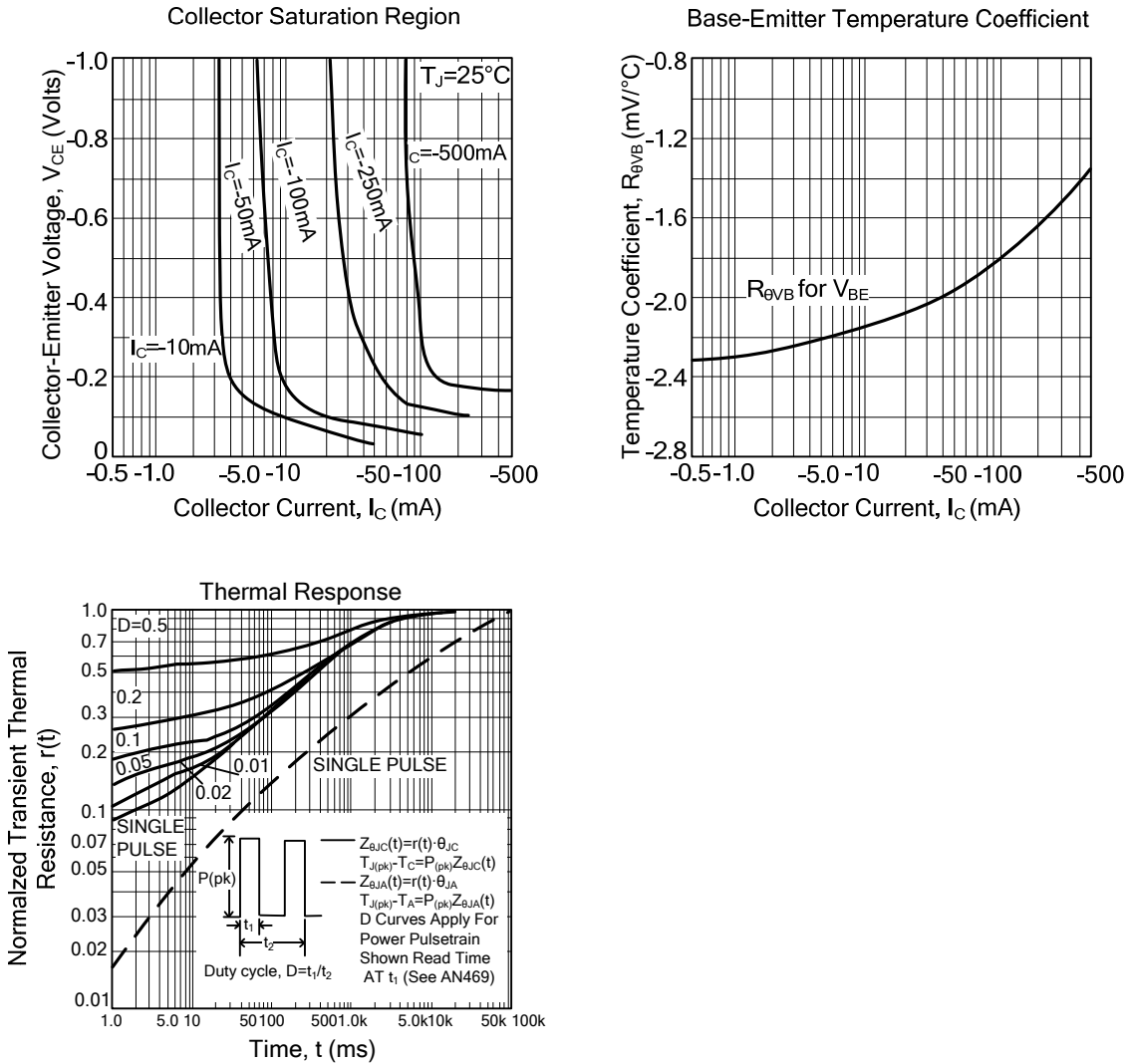
Note 1. Pulse test:  $PW \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

2.  $f_T$  is defined as the frequency at which  $I_{hfe}$  extrapolates to unity.

### TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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