



UNISONIC TECHNOLOGIES CO., LTD

UBV45

NPN SILICON TRANSISTOR

HIGH VOLTAGE FAST SWITCHING NPN POWER APPLICATIONS

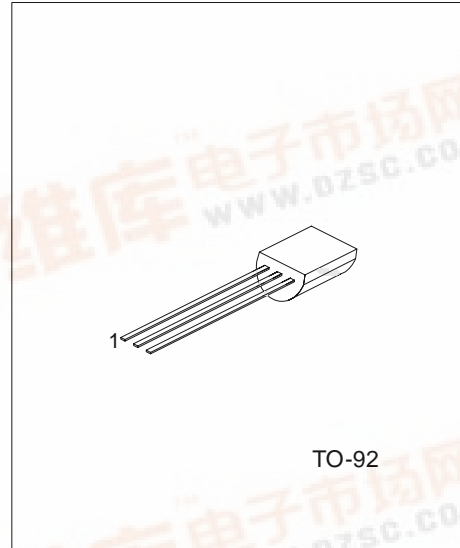
DESCRIPTION

The device is manufactured using High Voltage Multi Epitaxial Planar technology for high switching speeds and high voltage capability.

The UTC **UBV45** is designed for use in Compact Fluorescent Lamps.

FEATURES

- * High Voltage Capability
- * Low Spread of Dynamic Parameters
- * Very High Switching Speed



*Pb-free plating product number: UBV45L

ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
UBV45-T92-B	UBV45L-T92-B	TO-92	E	C	B	Tape Box
UBV45-T92-K	UBV45L-T92-K	TO-92	E	C	B	Bulk

<p>UBV45L-T92-B</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Plating</p>	<p>(1) B: Tape Box, K: Bulk</p> <p>(2) T92: TO-92</p> <p>(3) L: Lead Free Plating Blank: Pb/Sn</p>
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■ ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector Emitter Voltage ($V_{BE} = 0$)	V_{CES}	700	V
Collector Emitter Voltage ($I_B = 0$)	V_{CEO}	400	V
Emitter Base Voltage ($I_C = 0$)	V_{EBO}	9	V
Collector Current	I_C	0.75	A
Collector Peak Current ($t_p < 5$ ms)	I_{CM}	1.5	A
Base Current	I_B	0.4	A
Base Peak Current ($t_p < 5$ ms)	I_{BM}	0.75	A
Total Dissipation at Ta = 25°C	P_D	0.95	W
Junction Temperature	T_J	+150	°C
Storage Temperature	T_{STG}	-40 ~ +150	°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

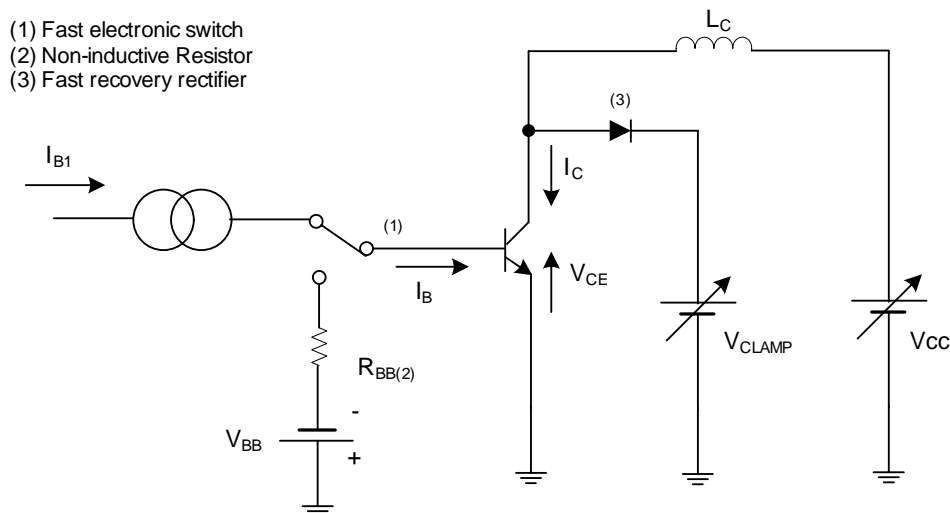
PARAMETER	SYMBOL	RATINGS	UNIT
Thermal Resistance Junction-ambient	θ_{JA}	130	/W

■ ELECTRICAL CHARACTERISTICS (Ta = 25 °C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Emitter Sustaining Voltage ($I_B = 0$)	$V_{CEO(SUS)}^*$	$I_C = 1$ mA	400			V
Collector Emitter Saturation Voltage	$V_{CE(SAT)}^*$	$I_C = 0.2$ A, $I_B = 40$ mA		0.2	0.5	V
		$I_C = 0.3$ A, $I_B = 75$ mA		0.3	1	
		$I_C = 0.4$ A, $I_B = 135$ mA		0.4	1.5	
Base Emitter Saturation Voltage	$V_{BE(SAT)}^*$	$I_C = 0.2$ A, $I_B = 40$ mA			1	V
		$I_C = 0.3$ A, $I_B = 75$ mA			1.2	
Emitter Cut off Current ($I_C = 0$)	I_{EBO}	$V_{EB} = 9$ V			1	mA
Collector Cut off Current ($V_{BE} = -1.5$ V)	I_{CEV}	$V_{CE} = 700$ V			250	μ A
DC Current Gain	h_{FE}^*	$I_C = 0.2$ A, $V_{CE} = 5$ V	12		27	
		$I_C = 0.4$ A, $V_{CE} = 5$ V	7		20	
Inductive Load Fall Time	t_F	$I_C = 0.2$ A, $V_{CLAMP} = 300$ V $I_{B1} = -I_{B2} = 40$ mA, $L = 3$ mH		0.3		μ s

* Pulsed: Pulse duration = 300 μ s, duty cycle = 1.5 %

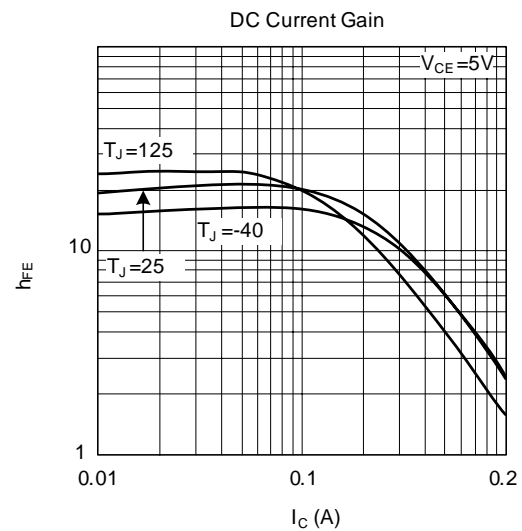
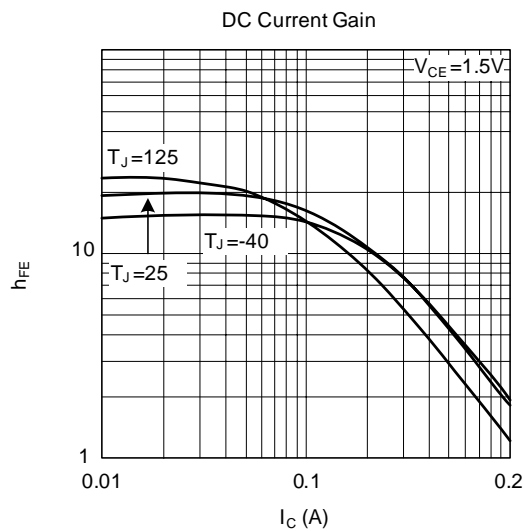
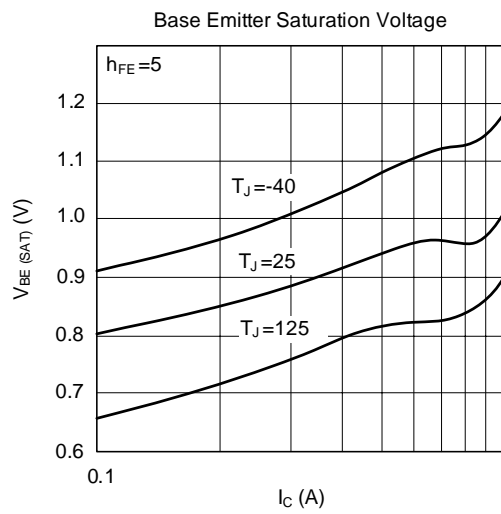
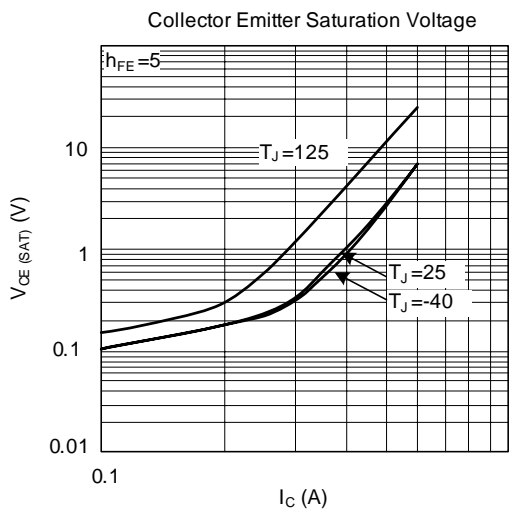
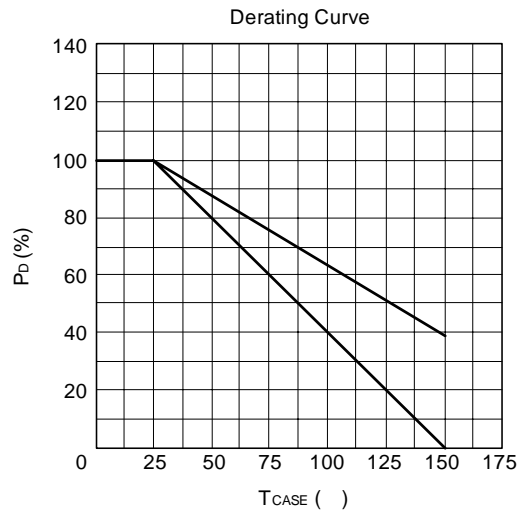
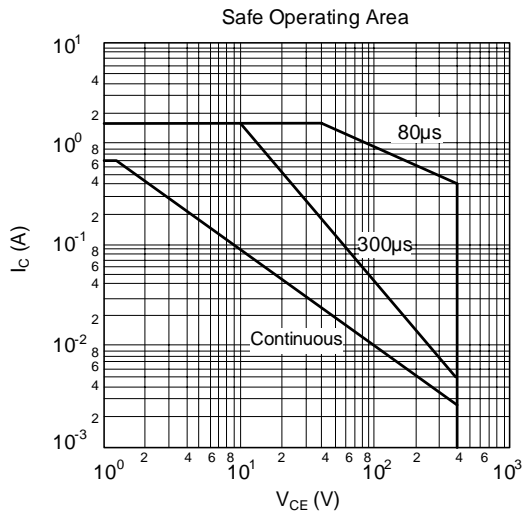
■ INDUCTIVE LOAD SWITCHING TEST CIRCUIT



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TYPICAL CHARACTERISTICS



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