



UBV45

NPN SILICON TRANSISTOR

HIGH VOLTAGE FAST SWITCHING NPN POWER APPLICATIONS

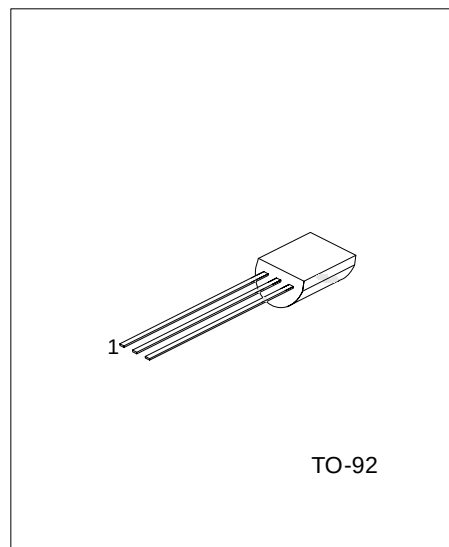
■ DESCRIPTION

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

UBV45L-T92-B (1)Packing Type (2)Package Type (3)Lead Plating	(1) B: Tape Box, K: Bulk (2) T92: TO-92 (3) L: Lead Free Plating, Blank: Pb/Sn
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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

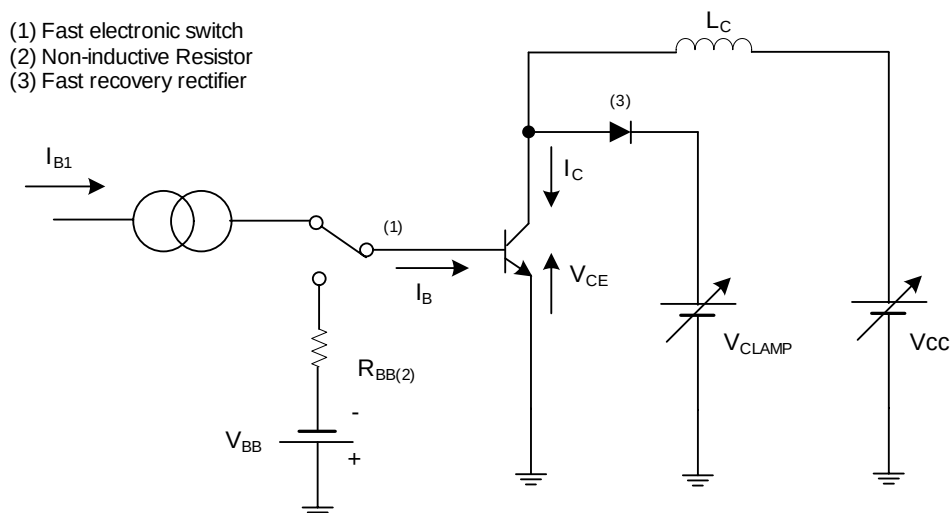
PARAMETER	SYMBOL	RATINGS	UNIT
Thermal Resistance Junction-ambient	θ_{JA}	130	°C/W

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

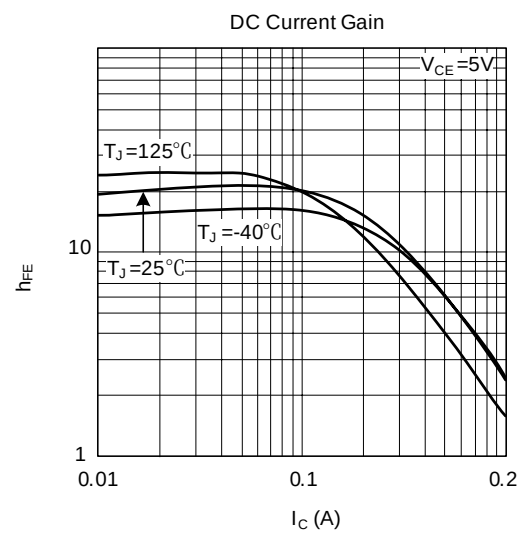
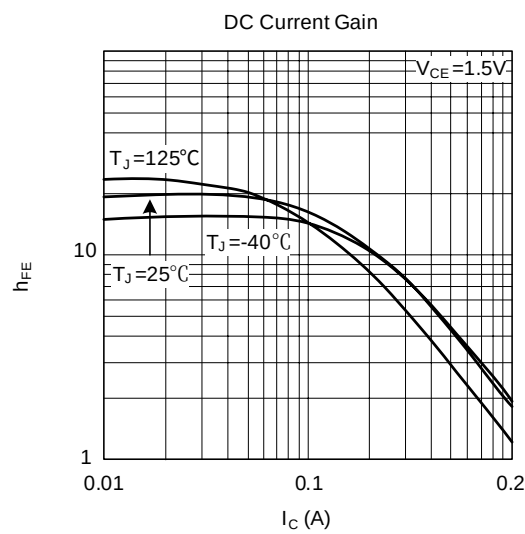
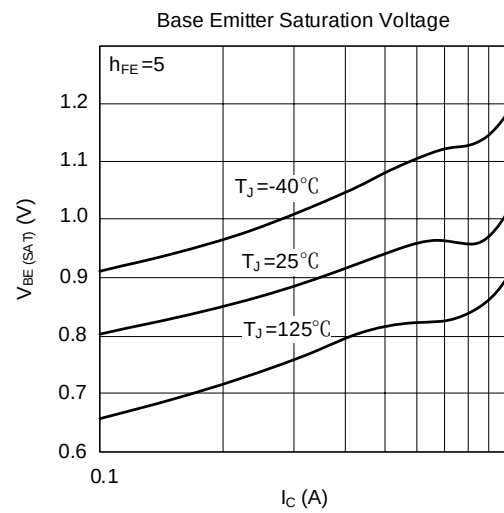
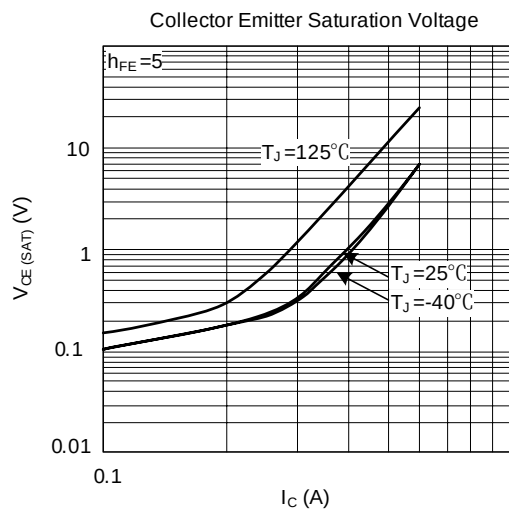
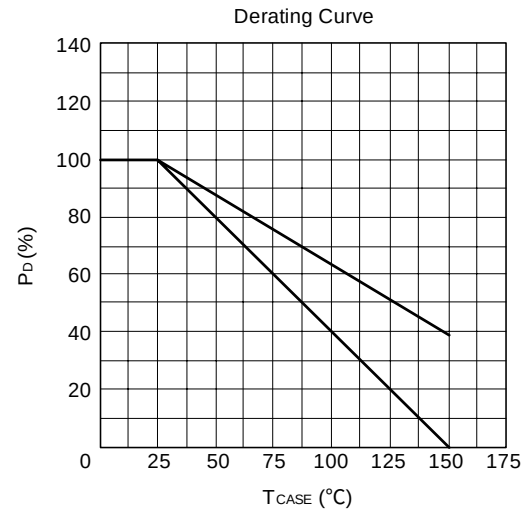
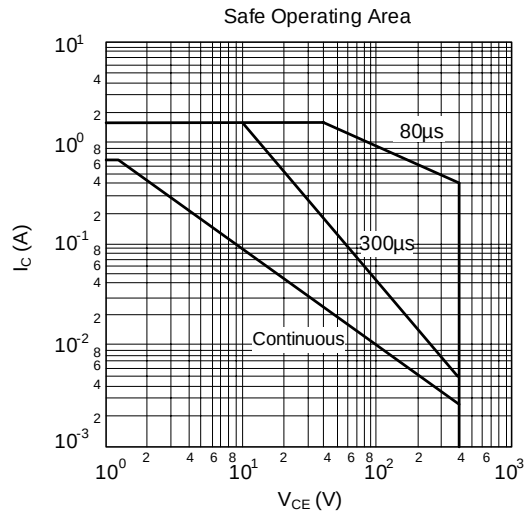
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Emitter Sustaining Voltage ($I_B = 0$)	$V_{CEO(SUS)*}$	$I_C = 1$ mA	400			V
Collector Emitter Saturation Voltage	$V_{CE(SAT)*}$	$I_C = 0.2$ A, $I_B = 40$ mA		0.2	0.5	V
		$I_C = 0.3$ A, $I_B = 75$ mA		0.3	1	
		$I_C = 0.4$ A, $I_B = 135$ mA		0.4	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	μA
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		μs

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

■ INDUCTIVE LOAD SWITCHING TEST CIRCUIT



TYPICAL CHARACTERISTICS



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