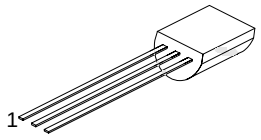
UBV45

NPN SILICON TRANSISTOR

HIGH VOLTAGE FAST SWITCHING NPN POWER APPLICATIONS



TO-92

*Pb-free plating product number: UBV45L

■ 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

■ 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 — (1) B: Tape Box, K: Bulk

(2)Package Type — (2) T92: TO-92

(3)Lead Plating — (3) L: Lead Free Plating, Blank: Pb/Sn

■ ABSOLUTE MAXIMUM RATINGS (Ta = 25℃)

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℃	P_D	0.95	W
Junction Temperature	T_J	+150	℃
Storage Temperature	T_{STG}	-40 ~ +150	℃

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.

■ THERAMAL DATA

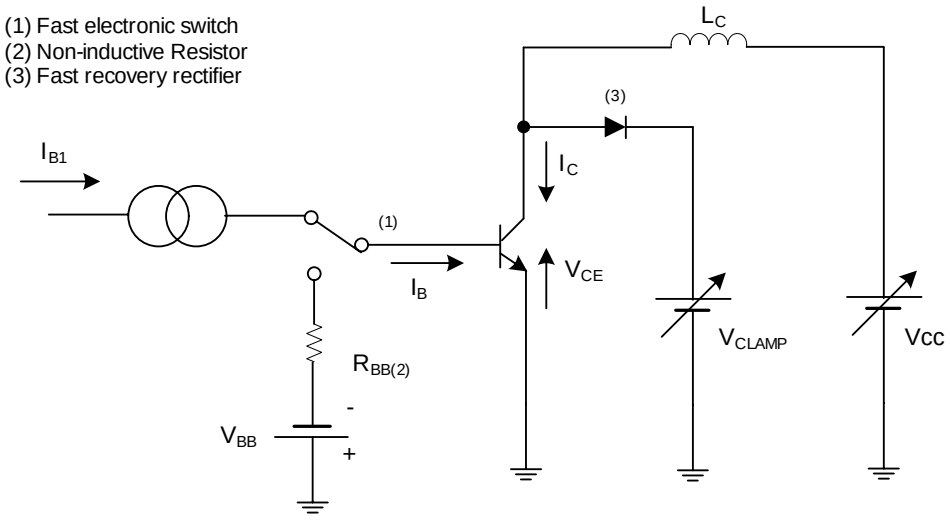
PARAMETER	SYMBOL	RATINGS	UNIT
Thermal Resistance Junction-ambient	θ_{JA}	130	℃/W

■ ELECTRICAL CHARACTERISTICS (Ta= 25℃, 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} = -1.5V)	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

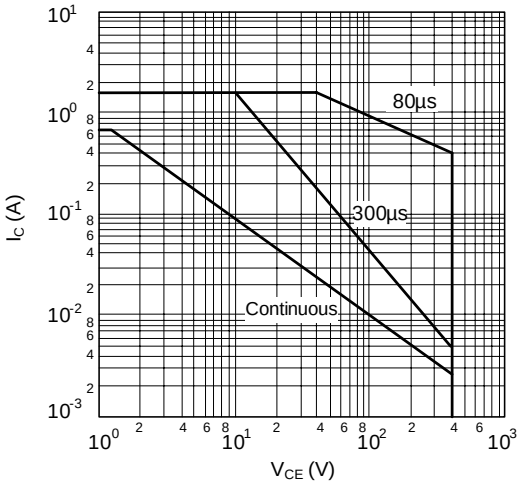
* Pulsed: Pulse duration = 300μs, duty cycle = 1.5 %

■ INDUCTIVE LOAD SWITCHING TEST CIRCUIT

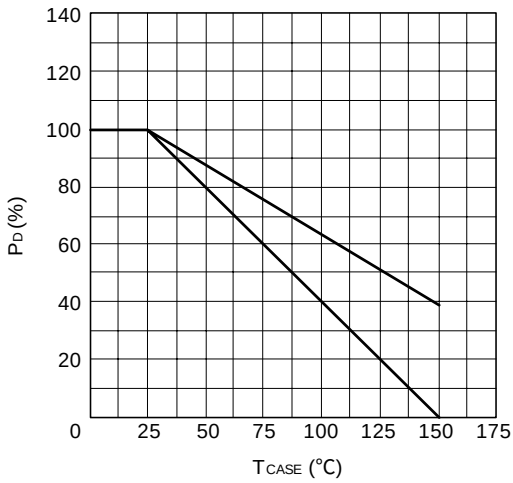


■ TYPICAL CHARACTERICS

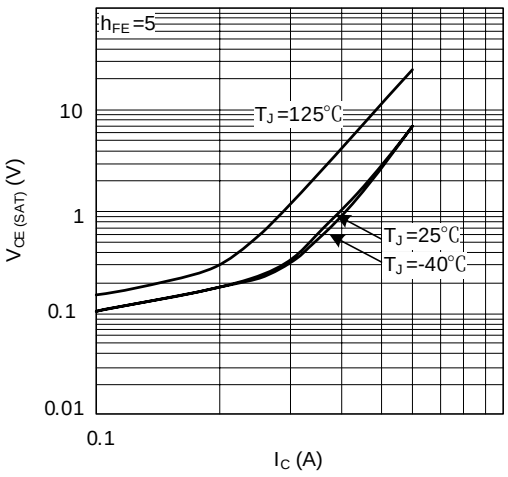
Safe Operating Area



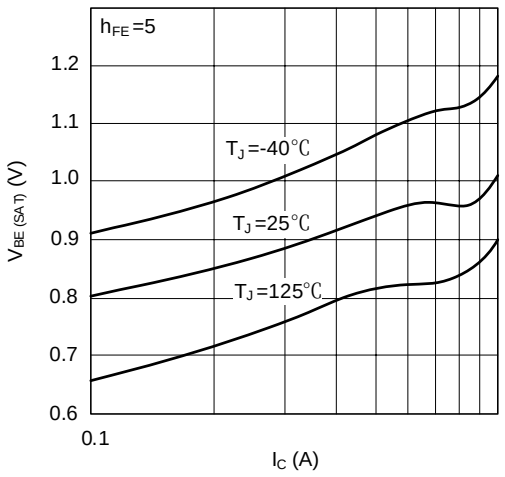
Derating Curve



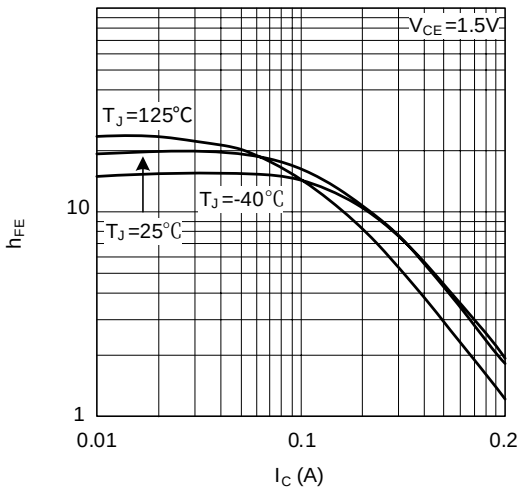
Collector Emitter Saturation Voltage



Base Emitter Saturation Voltage



DC Current Gain



DC Current Gain