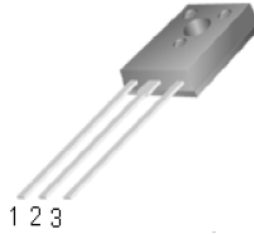


High Voltage NPN Power Transistor with Diode

Features

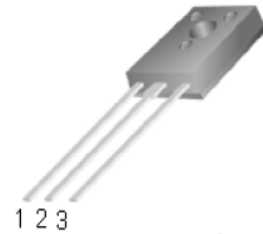
- High Voltage
- BV_{CEO} : 400V
- BV_{CBO} : 700V
- I_c : 2A
- Silicon Triple Diffused Type
- NPN Silicon Transistor with Diode
- Free-wheeling Diode Inside
- Low Variable Storage-time Spread
- Low Base Drive Requirement
- Half Bridge Light Ballast Application



TO-126

Pin Definition

1. Emitter
2. Collector
3. Base



TO-126R

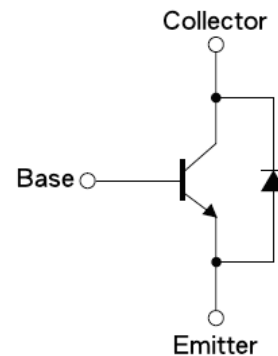
Pin Definition

1. Base
2. Collector
3. Emitter

Application

- Electronic Ballasts
- Adapter
- Lighting

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS ($T_c = 25^{\circ}C$)

Parameter	Symbol	Max rating	Unit
Collector-Base Voltage	V_{CBO}	700	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current (DC)	I_c	2	A
Collector Current (Pulse)		4	A
Base Current (DC)	I_B	0.5	A
Base Current (Pulse)		1	A
Total Power Dissipation (TO-92)	PD	30	W
Junction Temperature	T_J	+150	$^{\circ}C$
Operating Junction and Storage Temperature Range	TSTG	-55 ~ +150	$^{\circ}C$

ELECTRICAL CHARACTERISTICS (T_c = 25°C)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Collector-Base Voltage	BVCBO	IC = 1mA, IB=0	700	–	–	V
Collector-Emitter Breakdown Voltage	BVCEO	IC = 10mA, IE=0	400	–	–	V
Emitter- Base Breakdown Voltage	BVEBO	IE = 1mA, IC=0	10	–	–	V
Collector Cutoff Current	ICBO	VCB = 700V, IE=0	–	–	1	μA
Emitter Cutoff Current	IEBO	VEB = 9V, IC=0	–	–	1	μA
DC Current Gain	hFE1	VCE = 5V, IC=10mA	10	–	–	
	hFE2	VCE = 5V, IC=400mA	10	–	30	
	hFE3	VCE = 5V, IC=1A	5	–	–	
Collector-Emitter Saturation Voltage	VCE(SAT1)	IC = 0.5A, IB =0.1A	–	–	0.5	V
	VCE(SAT2)	IC = 1A, IB =0.25A	–	1.1	1.5	
Base-Emitter Saturation Voltage	VBE(SAT1)	IC = 0.5A, IB =0.1A	–	–	1.1	V
	VBE(SAT2)	IC = 1A, IB =0.25A	–	–	1.2	V

Resistive Load Switching Time (Ratings)

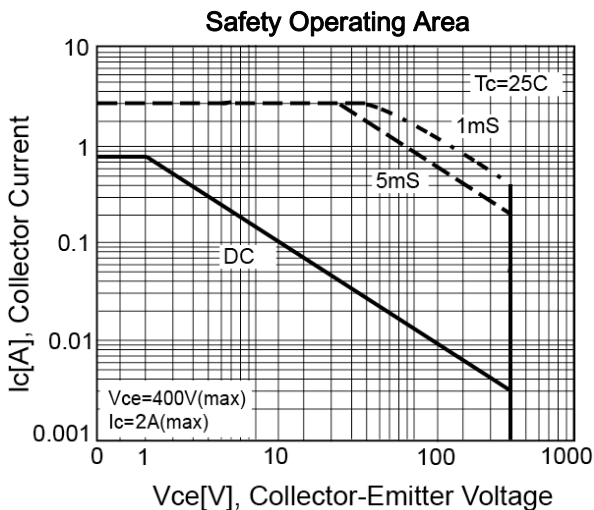
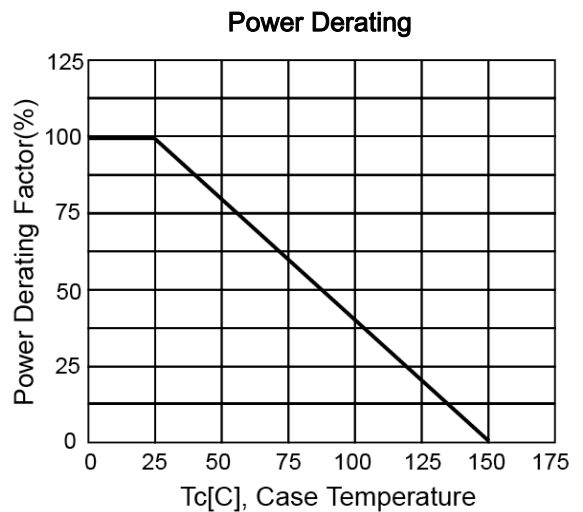
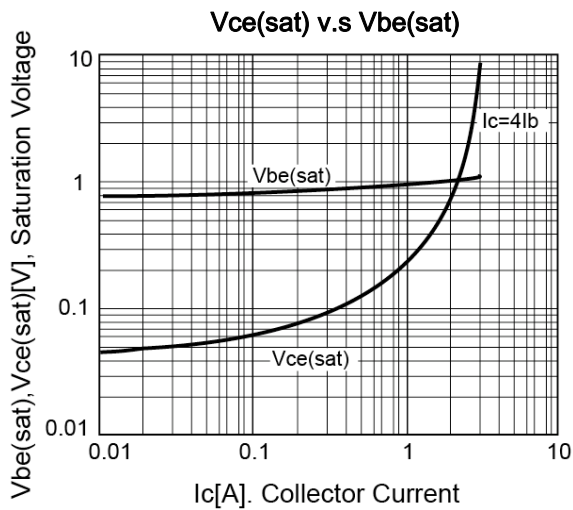
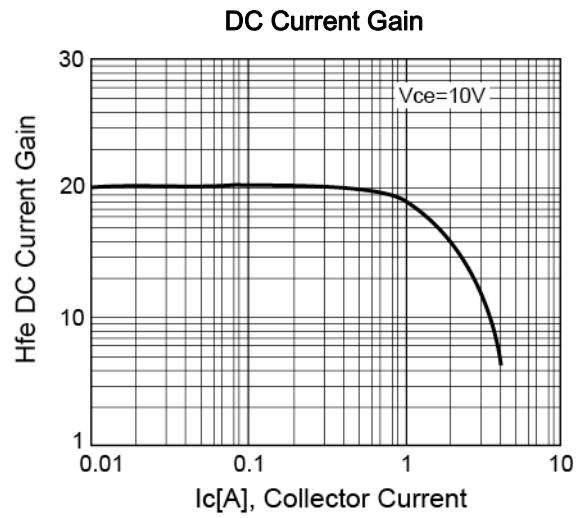
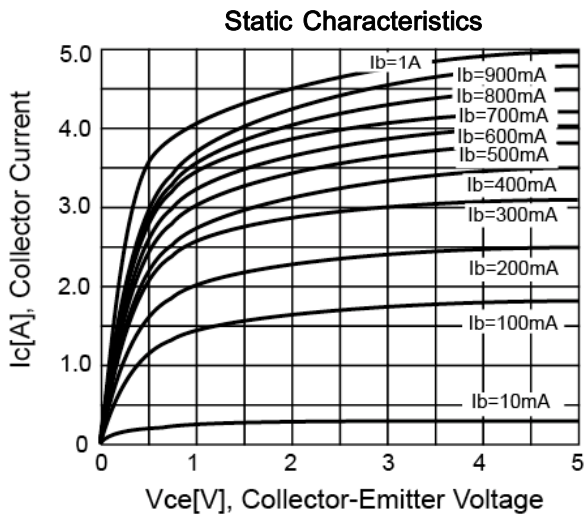
Rise Time	t _r	V _{CC} =250V, IC=1A, IB1=0.2A, IB2 = 0.2A, tp = 25μS Duty Cycle < 1%	–	0.5	0.7	μS
Storage Time	t _{STG}		–	0.6	1.5	μS
Fall Time	t _f		–	0.2	0.4	μS

Note: Pulse Duration = 300μS, duty cycle ≤ 2%

Thermal Performance

Parameter	Symbol	Limit	Unit
Junction to Case Thermal Resistance	R _{θ JC}	4.16	°C/W

Electrical Characteristic Curves



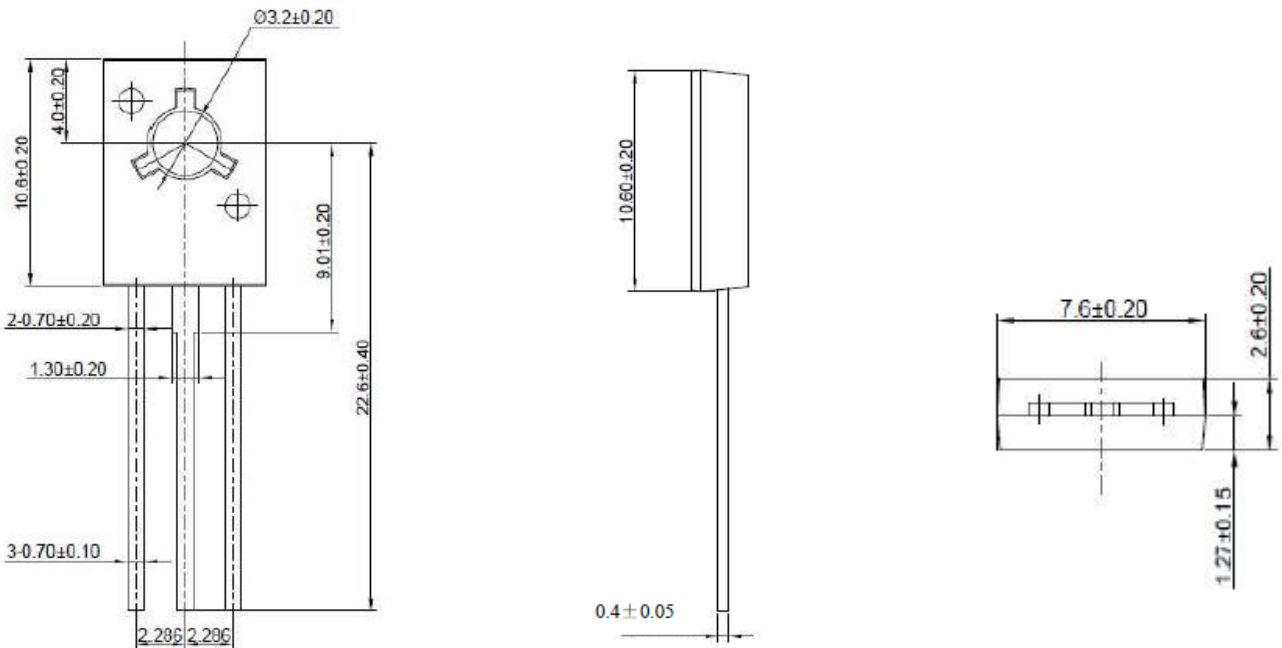
Ordering Information

Type NO	Marking	Package Code
WTBV118DM	118DM	TO-126
WTBV118DMR	118DMR	TO-126R

Marking and Pin Define

First Line	WTC	Company Name	
Second Line	118DM 118DMR	Product Code	
Third Line	CC0TM	1st (Year Code)	A-2010 B-2011 C-2012 ...
		2nd (Month Code)	A-Jan, B-Feb, C-Mar, D-Apr, E-May, F-Jun, G-Jul, H-Aug, I-Sep, J-Oct, K-Nov, L-Dec
		3rd (Lot Code)	0~9, A~Z
		4th (Product Code)	M - MOS, T - Transistor, L - Linear
		5th (Package Code)	I - TO251, D - TO252, L - TO92, M - TO126, X - TO220, F - TO220F, Y - SOT89, S - SOP8 N - SOT82
		6th (Spec Code)	(Reserve)

TO-126 Package Dimension



Unit : mm