MITSUBISHI INSULATED GATE BIPOLAR TRANSISTOR

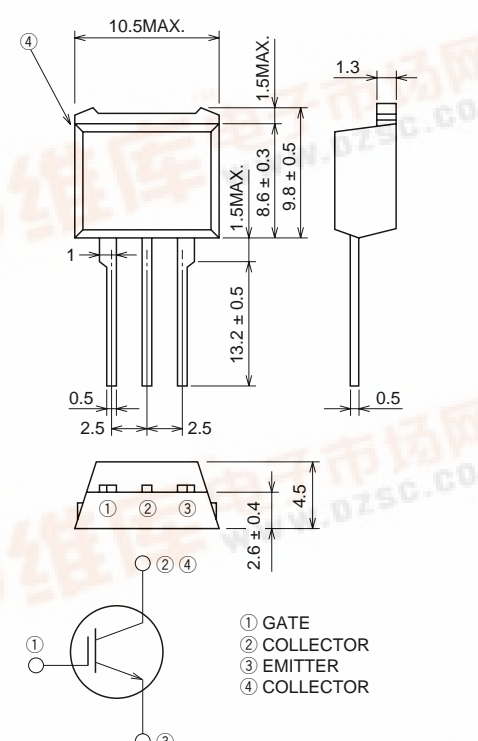# CT30VM-8

STROBE FLASHER USE

CT30VM-8

- V_{CES} 400V
- I_{CM} 180A

OUTLINE DRAWING   Dimensions in mm

① GATE
② COLLECTOR
③ EMITTER
④ COLLECTOR

TO-220C

APPLICATION

Strobe Flasher.

MAXIMUM RATINGS (Tc = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V_{CES}	Collector-emitter voltage	V_{GE} = 0V	400	V
V_{GES}	Gate-emitter voltage	V_{CE} = 0V, See notice 4	±30	V
V_{GEM}	Peak gate-emitter voltage	V_{CE} = 0V, tw = 0.5s	±40	V
I_{CM}	Collector current (Pulsed)	See figure 1	180	A
T_j	Junction temperature		−40 ~ +150	°C
T_{stg}	Storage temperature		−40 ~ +150	°C

ELECTRICAL CHARACTERISTICS (Tj = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
$V_{(BR)CES}$	Collector-emitter breakdown voltage	I_C = 1mA, V_{GE} = 0V	450	—	—	V
I_{CES}	Collector-emitter leakage current	V_{CE} = 400V, V_{GE} = 0V	—	—	10	μA
I_{GES}	Gate-emitter leakage current	V_{GE} = ±40V, V_{CE} = 0V	—	—	±0.1	μA
$V_{GE(th)}$	Gate-emitter threshold voltage	V_{CE} = 10V, I_C = 1mA	—	—	7.0	V

Feb.1999

MITSUBISHI ELECTRIC

PERFORMANCE CURVES

MAXIMUM PULSE COLLECTOR CURRENT

$C_M = 1000\mu F$

$T_C \leqq 50°C$

$T_C \leqq 70°C$

PULSE COLLECTOR CURRENT I_{CM} (A)

GATE-EMITTER VOLTAGE V_{GE} (V)

Figure 1

MAXIMUM PULSE COLLECTOR CURRENT

MAIN CAPACITOR C_M (µF)

$V_{CM} = 350V$
$T_C \leqq 70°C$
$V_{GE} \geqq 28V$

PULSE COLLECTOR CURRENT I_{CP} (A)
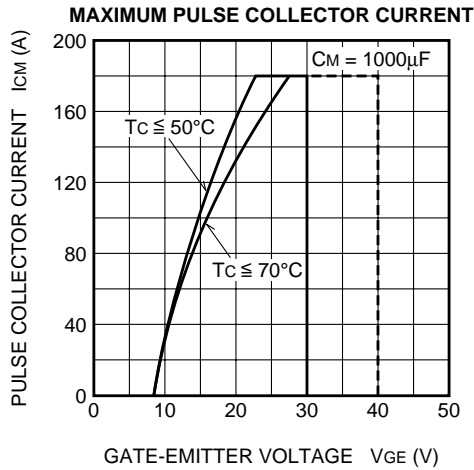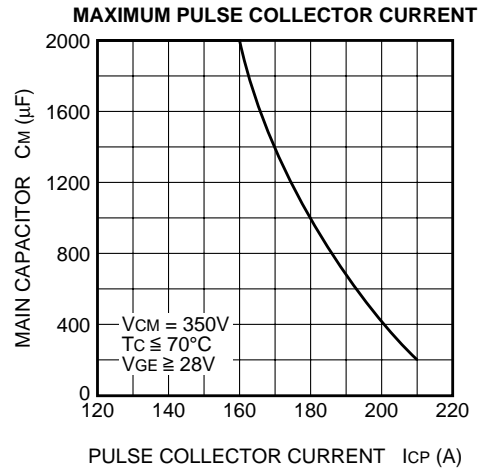
Figure 2

APPLICATION EXAMPLE

IXe

Vtrig

C_M

+
−

V_{CM}

R_G

V_{CE}

V_G

IGBT

TRIGGER
SIGNAL

Vtrig

IGBT GATE
VOLTAGE

V_G

Xe TUBE
CURRENT

Ixe
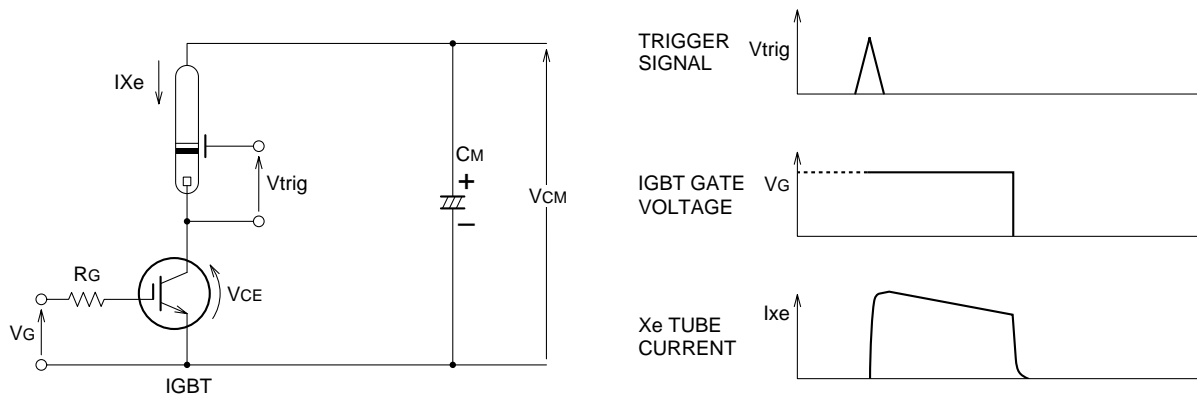
RECOMMEND CONDITION	MAXIMUM CONDITION
$V_{CM} = 330V$	360V
$I_P = 160A$	180A
$C_M = 800\mu F$	1000µF
$V_{GE} = 28V$	

Notice 1. Gate drive voltage during on-period must be applied to satisfy the rating of maximum pulse collector current.
And reverse gate current during turn-off must be kept less than 1A.
(In general, it is satisfied if $R_G \geq 30\Omega$)

Notice 2. IGBT has MOS structure and its gate is insulated by thin silicon oxide.
So please handle carefully not to suffer from electrostatic charge.

Notice 3. The operation life should be endured 5,000 shots under the charge current
($I_{xe} \leq 180A$: full luminescence condition) of main condenser (C_M=1000µF).
Repetition period under full luminescence condition is over 3 seconds.

Notice 4. Total operation hours must be applied within 5,000 hours.