GDU 91 20222

GATE DRIVE UNIT

This data sheet should be used in conjuction with the publication entitled GDU9X-XXXXX Series, Gate Drive Unit.

APPLICATIONS

■ Used with Gate Turn-Off Thyristors in high current switching applications

KEY PARAMETERS

I_{FGM}	**30A**
$I_{G(ON)}$	**4A**
dI_{GQ}/dt	**30A/µs**

CONDITIONS - (UNLESS STATED OTHERWISE)

V_1 = +5V	V_2 = +15V	V_3 = -15V
Test circuit GTO	DG408BP	
GDU connection to GTO	500mm CO - AX cable type RC5327230	
Test circuit emitter and gate drive emitter	Honeywell sweetspot HFE 4020 - 013	
Test circuit emitter current	30mA	
Test circuit receiver and gate drive receiver	Honeywell sweetspot HFD 3029 - 002	

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
I_{V1}	+5V PSU current	500Hz, 50% duty cycle	-	-	2.2	A
I_{V2}	+15V PSU current	500Hz	-	-	0.55	A
I_{V3}	-15V PSU current	500Hz, I_T = 1000A GTO T_j = 125˚C	-	-	3.0	A
$V_{1(Min)}$	+5V PSU minimum	-	3.8	-	-	V
$V_{2(Min)}$	+15V PSU minimum	-	14.0	-	-	V
$V_{3(Min)}$	-15V PSU minimum	-	14.0	-	-	V
I_{FGM}	Peak forward gate current	-	30	-	-	A
$I_{G(ON)}$	On-state gate current	-	-	4	-	A
dI_{FG}/dt	Rate of rise of positive gate current	Measured 10 - 75% I_{FGM}	-	30	-	A/µs
dI_{GQ}/dt	Rate of rise of negative gate current	I_T = 1000A, 90% $I_{G(ON)}$ - 50% I_{GQM}	-	30	-	A/µs

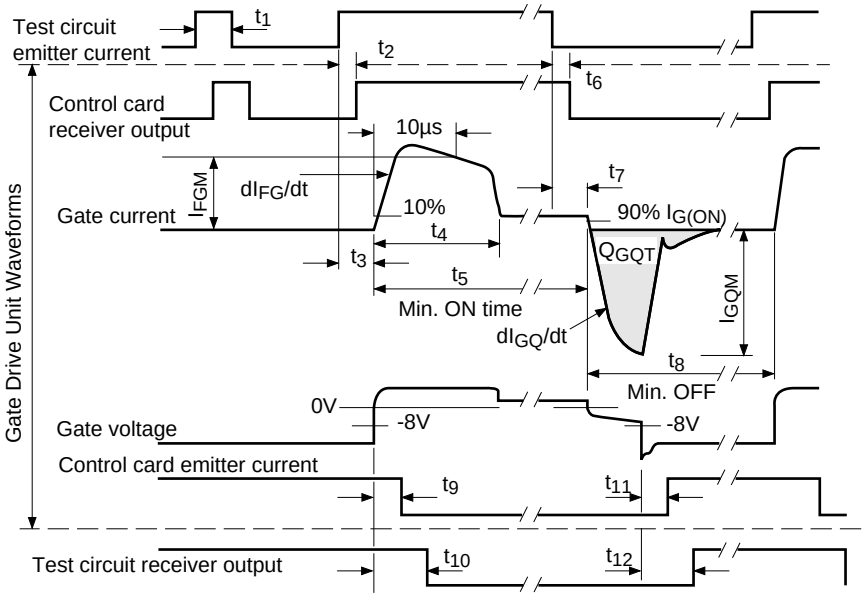
TIMING CHARACTERISTICS

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
t_1*†	No response pulse width of input signal	Adjustable by R81 + R82	2	-	3	µs
t_2	Delay time emitter current to receiver o/p	-	0.4	-	0.8	µs
t_3*†	Turn-on delay emitter current to 10% I_{FGM}	-	5.2	-	6.2	µs
t_4	I_{FGM} pulse width	-	-	25	-	µs
t_5*	Minimum on time 10% I_{FGM} to 90% $I_{G(ON)}$	Adjustable by R37	80	-	110	µs
t_6	Receiver storage time	-	0.5	-	0.9	µs
t_7	Turn-off delay. Emitter current to 90% $I_{G(ON)}$	-	1.5	-	2.3	µs
t_8*	Minimum off time 90% $I_{G(ON)}$ to 10% I_{FGM}	Adjustable by R38	80	-	110	µs
t_9	Delay time Gate volts to o/p emitter current	-	-	0.1	-	µs
t_{10}	Turn-off delay Gate volts to test receiver o/p	-	-	0.7	-	µs
t_{11}	Storage time Gate volts to o/p emitter current	Measured at low I_{GQM}	-	0.1[1]	-	µs
t_{12}	Turn-on delay Gate volts to test receiver o/p	Measured at low I_{GQM}	-	0.8[1]	-	µs

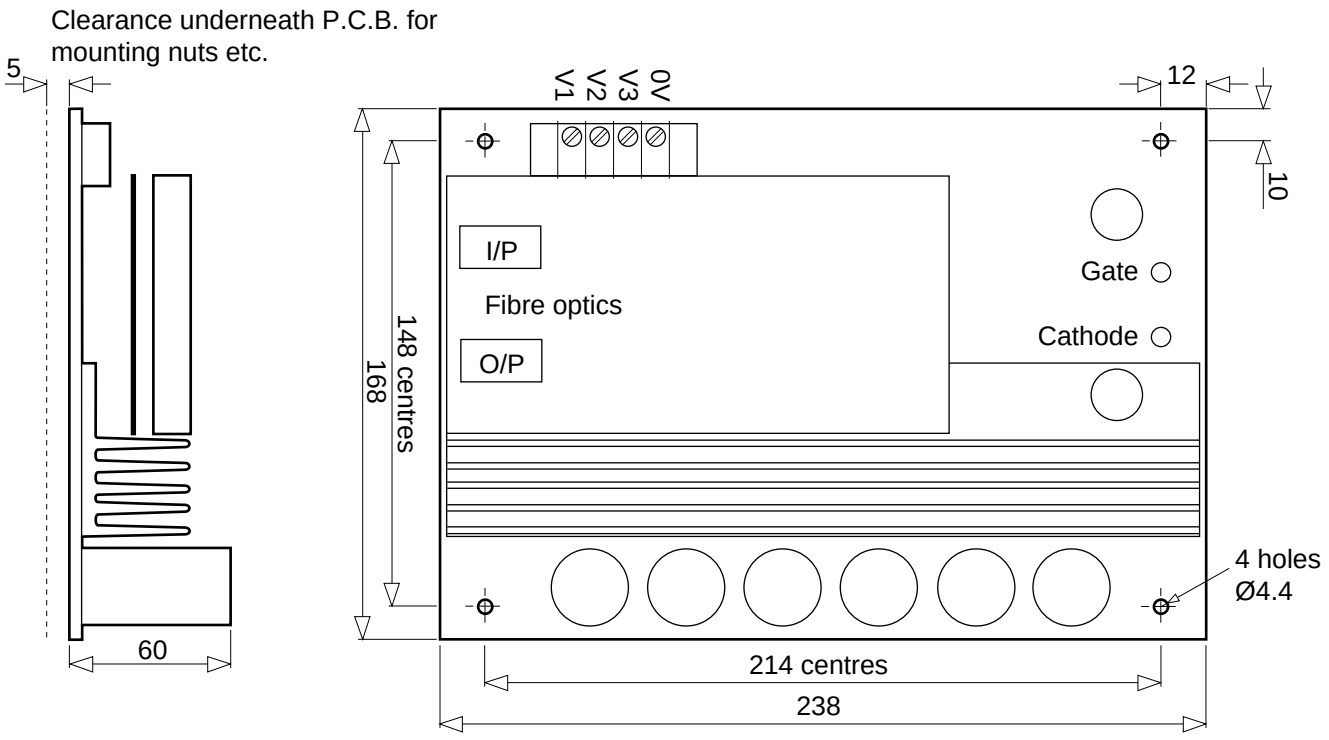
* t_1,t_3,t_5,t_8 are factory settings.

† Adjustment of t_1 alters t_3.

1. Varies with I_{GQM} due to gate lead impedance.



OUTLINE



Weight: 1.16Kg

All dimensions in mm, unless stated otherwise. DO NOT SCALE.

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