K GATE DRIVER MODULES FOR GTO THYRISTOR

absolute maximum ratings	Type / Symbol	GK2AN (For 358RGA100~120, 359RGA100~120, 353PGA100E~120E GTO)	GK2BN (For 603PGA100A~120A, 603PGA100E~120E GTO)	GK2C (For 1201PGA100A~120A, 1201PGA100E~120E GTO)	※GK2D (For 803PGA200~250 GTO)	※GK2E (For 1201PGA200~250, 1401PGA200~250 GTO)	Unit
input voltage (on drive)	V_F	5.0±0.5	5.0±0.5	5.0±0.5	5.0±0.5	8.0±0.5	V
input voltage (off drive)	V_R	15.0±1.0	15.0±1.0	15.0±1.0	15.0±1.0	18.0±1.0	V
input signal voltage (to turn on)	V_I	12.0±2.0	12.0±2.0	12.0±2.0	12.0±2.0	12.0±2.0	V
RMS-withstand voltage input-output	V_{INS}	2,500	2,500	2,500	4,500	4,500	V
		50Hz sine wave for 1 min					
frequency range	f	1~2,500	1~2,500	1~1,500	1~2,500	1~1,500	Hz
average duty factor	Dmax	50	50	50	50	50	%
ambient temperature range	Ta	−10~+60	−10~+60	−10~+60	−10~+60	−10~+60	℃
storage temperature range	Tstg	−10~+70	−10~+70	−10~+70	−10~+70	−10~+70	℃
minimum off-time	toff	40	40	60	55	70	μS

electrical characteristics @Ta=25℃, V_F=5V, V_R=15V (unless otherwise specified)	Type / Symbol	GK2AN min.	GK2AN typ.	GK2AN max.	GK2BN min.	GK2BN typ.	GK2BN max.	GK2C min.	GK2C typ.	GK2C max.	※GK2D min.	※GK2D typ.	※GK2D max.	※GK2E min.	※GK2E typ.	※GK2E max.	Units
average input current (on drive)	$I_{F(AV)}$	−	580	−	−	860	−	−	1,630	−	−	1,430	−	−	2,050	−	mA
		f=500Hz, duty factor 50%						f=300Hz, D=50%			f=500Hz, duty factor 50%						
average input current (off drive)	$I_{R(AV)}$	−	200	−	−	360	−	−	550	−	−	520	−	−	840	−	mA
		f=500Hz, I_T=250A			f=500Hz, I_T=500A			f=300Hz, I_T=800A			f=500Hz, I_T=600A						
input signal current	I_I	−	11	−	−	11	−	−	11	−	−	11	−	−	11	−	mA
		V_I=12V			V_I=12V			V_I=12V			V_I=12V			V_I=12V		
peak positive gate current	I_{G1}	−	8.2	−	−	10.5	−	−	14	−	−	14	−	−	30	−	A
steady state positive gate current	I_{G2}	−	1.0	−	−	1.6	−	−	3.1	−	−	2.1	−	−	3.1	−	A
rate of rise of positive gate current @1μs	diG_1/dt	−	7.6	−	−	9	−	−	10	−	−	10	−	−	20	−	A/μS
output delay time of positive gate current	t_{DF}	4.0	−	7.0	4.0	−	7.0	4.0	−	7.0	7.0	−	10.0	7.0	−	10.0	μS
turn-off gain	G_{GQ}	−	3.3	−	−	4.0	−	−	4.0	−	−	4.0	−	−	4.5	−	−
		Tj=25℃, I_T=350A			Tj=25℃, I_T=600A			Tj=25℃, I_T=1,200A			Tj=25℃, I_T=800A			Tj=25℃, I_T=1,400A		
rate of rise of negative gate current @1μs	$diGQ/dt$	−	75	−	−	80	−	−	95	−	−	65	−	−	70	−	A/μS
		I_T=350A			I_T=600A			I_T=1,200A			I_T=800A			I_T=1,400A		
output delay time of negative gate current	t_{DR}	4.0	−	8.0	4.0	−	7.0	4.0	−	7.0	5.0	−	9.0	5.0	−	9.0	μS
average power consumption @f=500Hz duty factor=50%	P_{IN}	−	5.9	−	−	9.7	−	−	16.4	−	−	14.8	−	−	32	−	W
		I_T=250A			I_T=500A			I_T=800A			I_T=600A					
threshold voltage (on)	$V_{F(TH)}$	−	4.2	−	−	4.2	−	−	4.2	−	−	4.2	−	−	4.2	−	V
threshold voltage (off)	$V_{R(TH)}$	−	13.5	−	−	13.5	−	−	13.5	−	−	13.5	−	−	13.5	−	V
no response pulse width of input signal	W_{SC}	1.0	−	2.0	1.0	−	2.0	1.0	−	2.0	−	2.5	−	−	2.5	−	μS
		V_I=12V			V_I=12V			V_I=12V			V_I=12V			V_I=12V		
minimum on-time	$t_{on(MIN)}$	−	24	−	−	24	−	−	45	−	−	60	−	−	90	−	μS
		±2,000															V/μS

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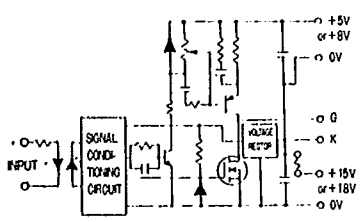
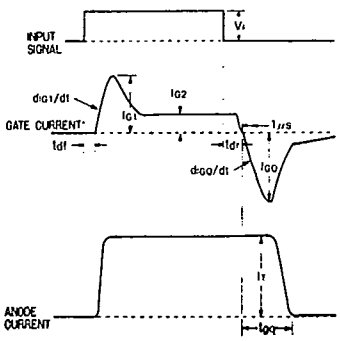
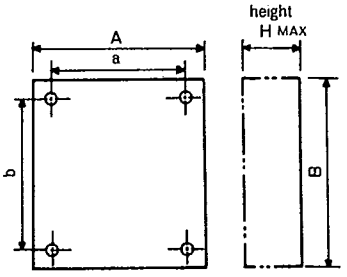
● Block Diagram



● Timing Diagram



● Outline Drawing



Type No.	Dimensions (mm) A	B	a	b	H
GK2AN	90	90	80	80	42
GK2BN					
GK2C	100	125	90	115	
GK2D	105	130	95	120	
GK2E	135	160	125	150	58