GE-SPCO

Static Power Component Operation
Malvern,PA USA

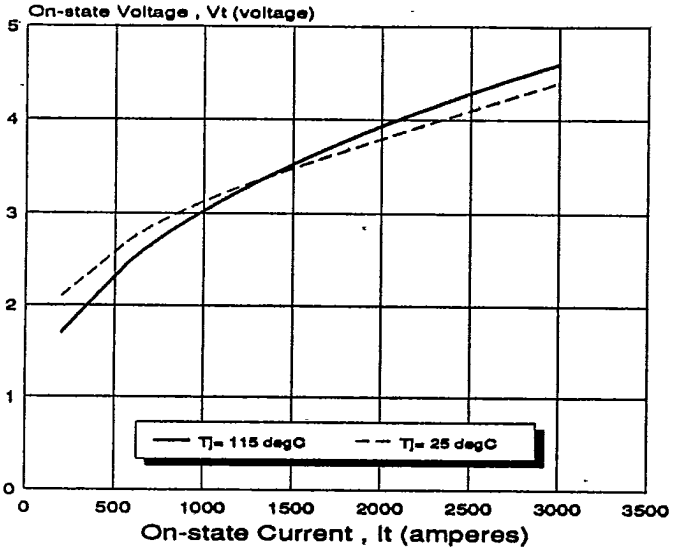
6RT411*
77mm GTO PRESSPAK
4500V / 2500A

* made in USA

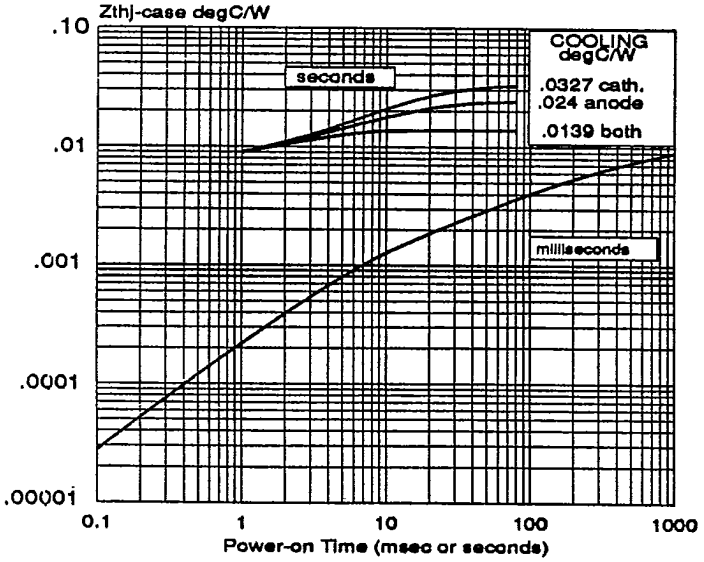
G E CO, STATIC PWR CMPNT 26E D

The GE type 6RT411 reverse blocking gate turn-off thyristor, GTO, is manufactured by the proven multi-diffusion process and incorporates a unique emitter design (patent applied for) which offers distinct advantages for improving the gate turn-off conditions.
It is supplied in an industry accepted disc-type package, ready for mounting to a heat dissipator using commercially available hardware.

ON-STATE CHARACTERISTIC



THERMAL IMPEDANCE / RESISTANCE
Junction to Case (DC)



* add interface Rthc-s of .003 for double or .006 for single sided cooling

REPETITIVE PEAK REVERSE AND OFF-STATE BLOCKING VOLTAGE

T_j= 0 to 115°C

MODEL	V_{DRM} (volts)	V_{RRM}
6RT411HK	4500	4500
6RT411HH	4400	4400
6RT411HF	4300	4300
6RT411HD	4200	4200
6RT411HB	4100	4100
6RT411FT	4000	4000

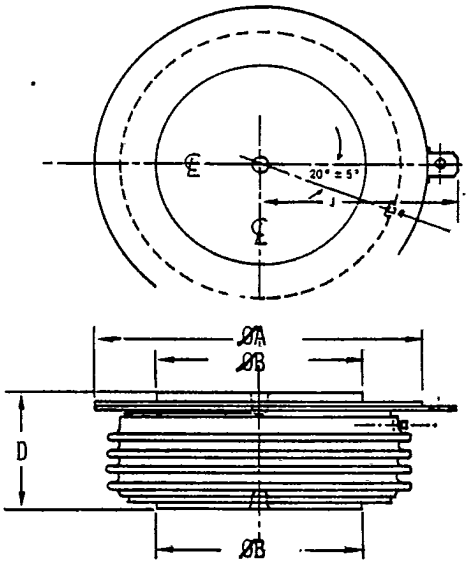
CONTROLLABLE CURRENTS

(instantaneous)

Repetitive I_{TQRM}=2000A

Non-repetitive I_{TQSM}=2500A

MECHANICAL OUTLINE



ØA = 4.300 in (109 mm)
ØB = 2.877 in (73mm)
D = 1.050 in (26.7 mm)

LIMITING CHARACTERISTICS and RATINGS

Repetitive peak off-state and rev. current	I_{DRM} I_{RRM}	T_j=115°C T_j= 25°C R_{GK}=4.7ohms	150 10	ma
Repetitive RMS on-state current	$I_{T(RMS)}$	note 1	800	A
Non-repetitive peak surge current	I_{TSM}	10.0 ms 8.3 ms	14000 15500	A
On-state voltage	V_{TM}	I_{TM}=2000A T_j=115°C t_p=8.3ms	4.0	V
Critical rate of rise of on-state current	di/dt_{CR}	V_d=.5V_{DRM} freq=50/60 Hz see gating req'd	300	A/us
Peak rev.recovery current/charge	$I_{RM(REC)}$ Q_{RR}	di/dt=300A/us T_j=115°C	1250 4800	A uC
Critical rate of rise of off-state voltage	dv/dt_{CR}	V_D=.7V_{DRM} exponential V_{RGO}=-4V	1000	V/us

EXTERNAL GATE DRIVE Nominal Requirements

Turning on	I_{FG}	di_{FG}/dt of 40A/us	60	A
Hold on gate current	I_{FGL}	(back porch)	10	A
Turning off	I_{RG}	di_{RG}/dt of 50A/us	500	A
Holding off gate bias	V_{RGO}	continuous	4	V
Reverse crest working gate voltage	V_{RGW}		15-20	V
Rep.peak reverse gate current	I_{RGM}		100	ma
Turn off gate current	I_{RGM}		600	A
Turn-off energy	E_{RG}		.125	joule

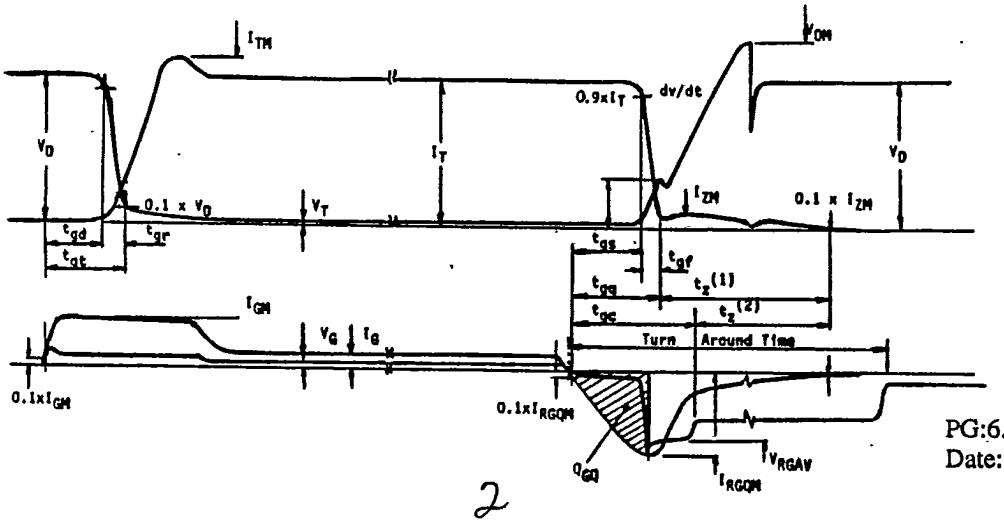
Turn on energy	E_{ON}	note 2	4.5	ws/p
Gate controlled delay time	t_{GD}	note 2	8	us
Integral latching current	I_{LI}		___	A
Integral holding current	I_{HI}		___	A
Turn-off energy	E_Q	note 3	5.5	ws/p
Forward spike at turn-off	V_{DP}		1000	V
Turn off gate current	I_{RGM}	note 3	600	A
Storage time	t_{st}	note 3	16	us
Gate controlled recovery charge and time	Q_{GQ} t_{GQ}		4800 20	uC us
Tail time	t_z		180	us

THERMAL AND MECHANICAL

Operating and storage temps.	T_j T_{STG}	0 to +115	°C
Thermal resistance	R_{THJ-C}	.0139	C/W
Mounting force		6000 +/- 350	lb

Notes:

1. Half-wave rectification: I_T= 2 I_{RMS} with required gating
2. V_D=0.5V_{DRM}, I_T=2000A, di/dt=300A/us, I_{GM}=60A, di_G/dt=40A/us T_j=115°C
3. I_T=2000A, V_{DP}=800V, V_{DM}=3000V, V_D=2000V, T_j=115°C I_{RGM}=600A di_{RG}/dt=50A/us, with polarized snubber, 6uF & 5 ohms



PG:6.201 sh 2
Date: 4/8/90

2