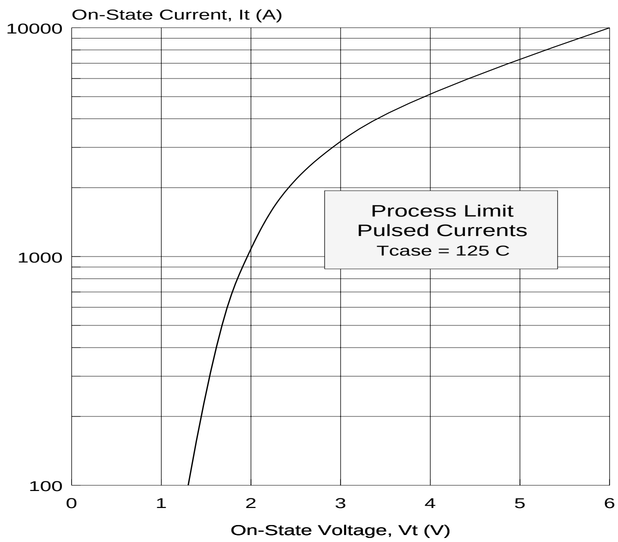
INVERTER THYRISTO R
C714
53mm / 2000V / 40us/ 750Hz

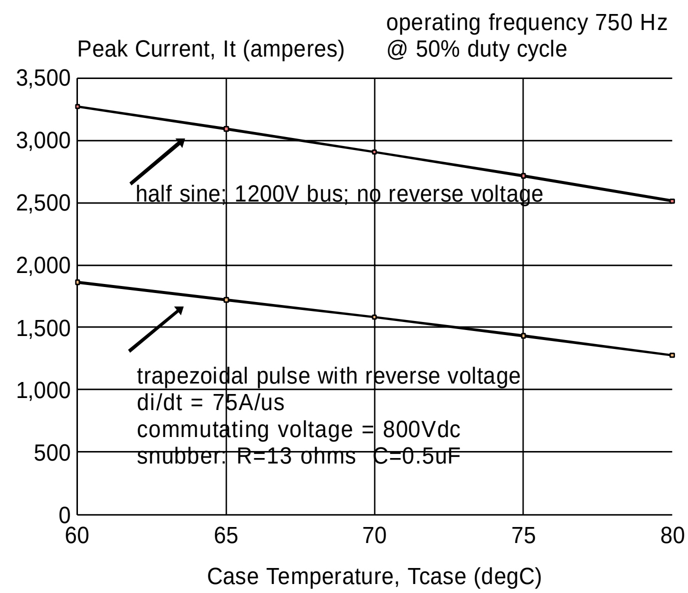
Type C714 reverse blocking thyristor is suitable for inverter applications which do not employ an inverse parallel free wheeling diode and for which reverse recovery losses at elevated frequencies can be significant. The silicon junction is manufactured by the proven multi-diffusion process and utilizes the exclusive involute gate structure. It is supplied in an industry accepted disc-type package, ready to mount using commercially available heat dissipators and mechanical clamping hardware.

MODEL	V_{DRM} / V_{RRM} -40 to +125°C
C714L	2000 Volts

ON-STATE CHARACTERISTIC

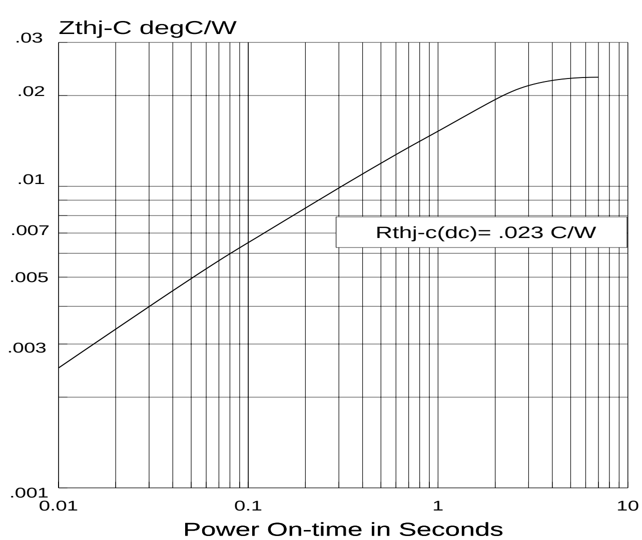


V845onst

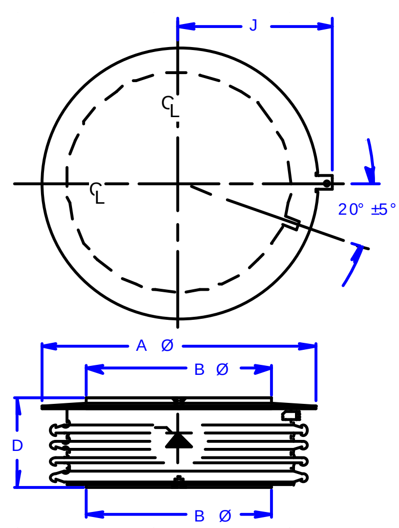


45tc

THERMAL IMPEDANCE



MECHANICAL OUTLINE

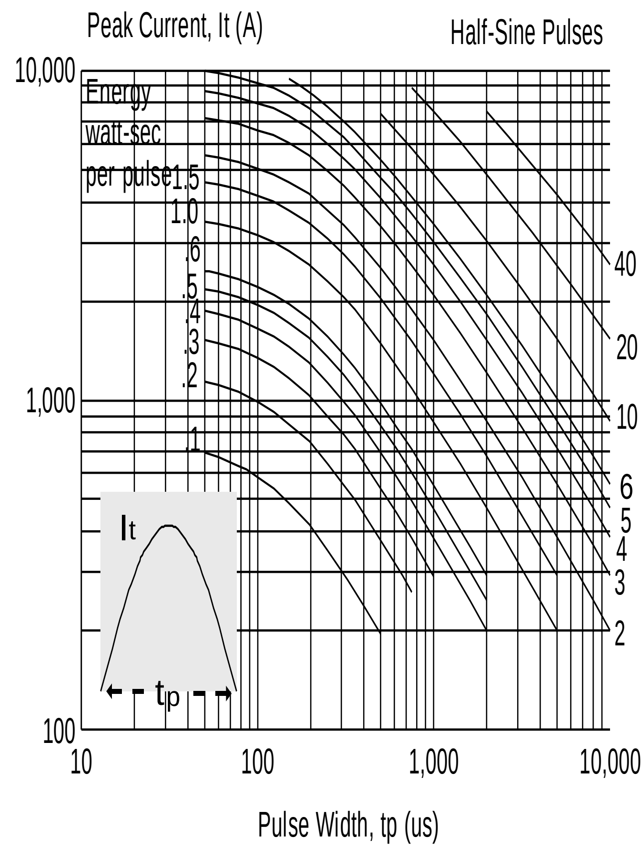


AΦ = 2.96 in (75.2 mm)
BΦ=1.90 in (48.3 mm)
D=1.07 in (27.2 mm)

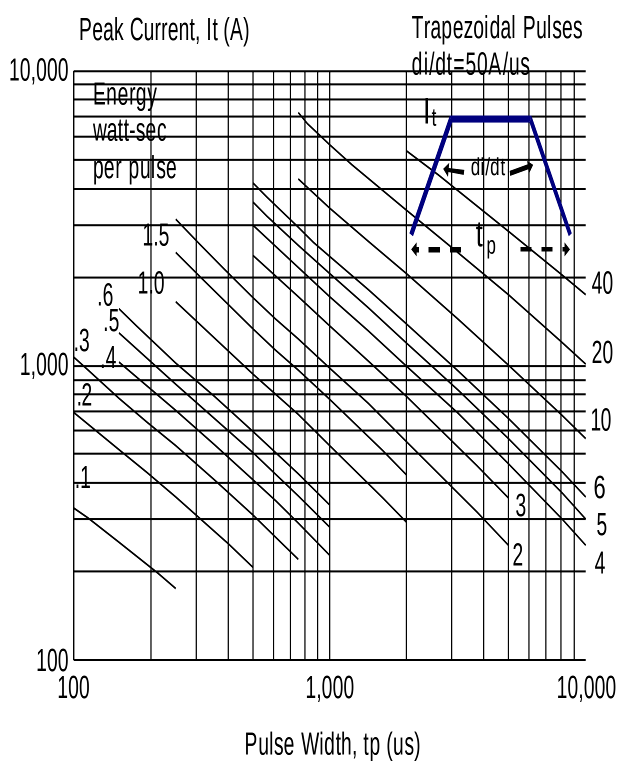
175 Great Valley Parkway, Malvern, PA 19355
USA

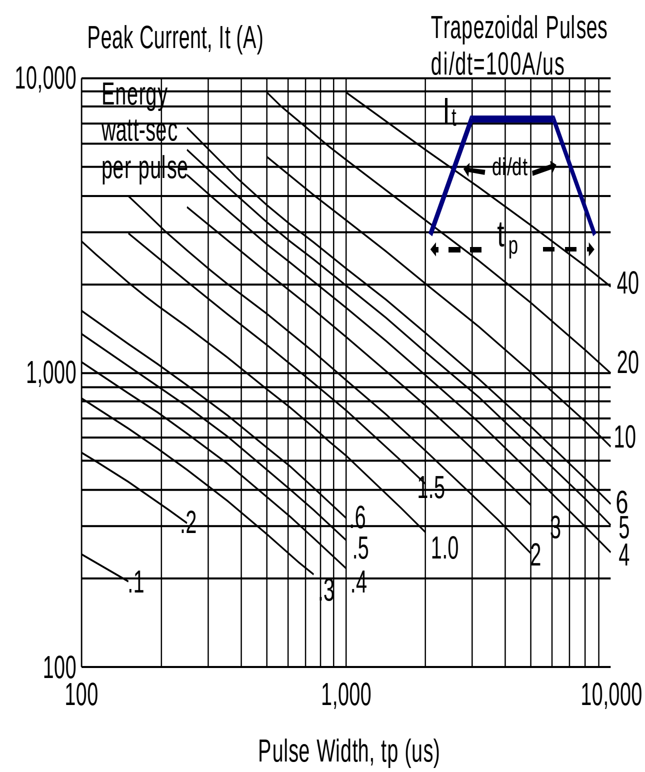
LIMITING CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	LIMIT	UNITS
Average on-state current	$I_{T(av)}$	Tcase = 70°C 750 Hz with FWD	925	A
Repetitive peak off-state & reverse voltage	V_{DRM}/V_{RRM}	T_J = -40 to +125°C	2000	volts
Off-state & reverse current	I_{DRM}/I_{RRM}	T_j = 125°C	60	ma
Peak half cycle non-repetitive surge current	I_{TSM}	60Hz (8.3ms 50Hz (10ms)	16 14.7	kA)
On-state voltage	V_{TM}	I_T = 1000A t_P = 8.3ms T_J = 125°C	1.95	volts
Critical rate of rise of on-state current	di/dt_{rep} $di/dt_{non\text{-}rep}$	V_D = 1500V Tj=125°C see gate drive	200 800	A/us
Critical rate of rise of off-state voltage	dv/dt	V_{DCRIT} = 80%V_{DRM} T_j = 125°C	500	v/us
Peak recovery current	I_{RM}	T_J = 125°C @ 10A/us @ 50A/us @ 100 A/us	 56 214 368	A
Circuit commutated turn-off time	t_Q	400 V/us to 70% V_{DRM} Vr = > 50 V Vr = 2 V	 40 45	us



v845sne.ch3

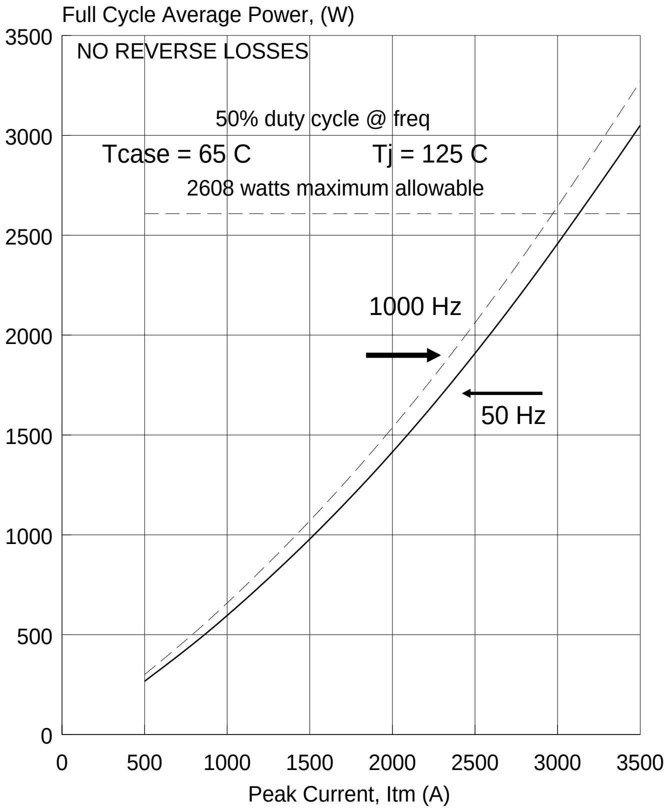




v845tre2.ch3

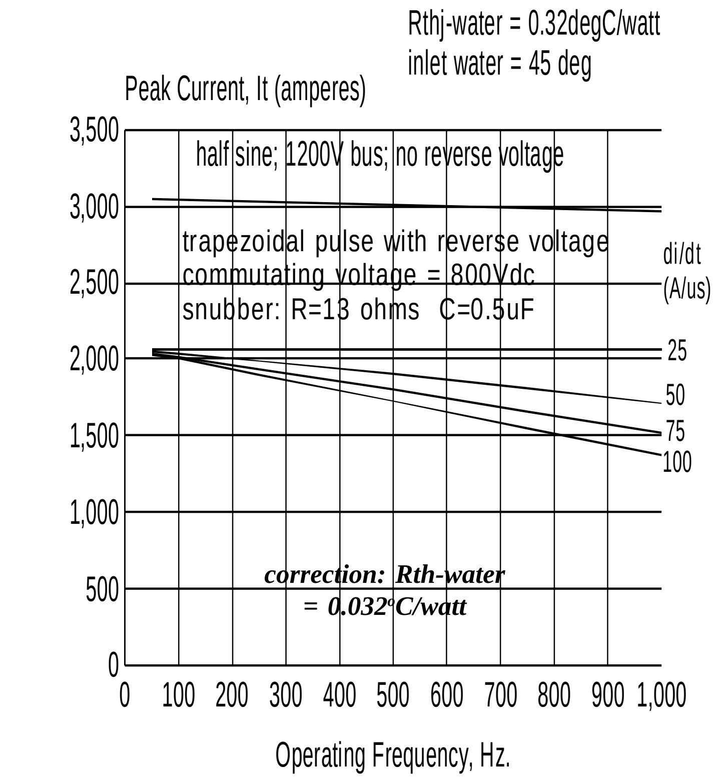
v845tre1.ch3

AVERAGE POWER LOSS
half sine wave



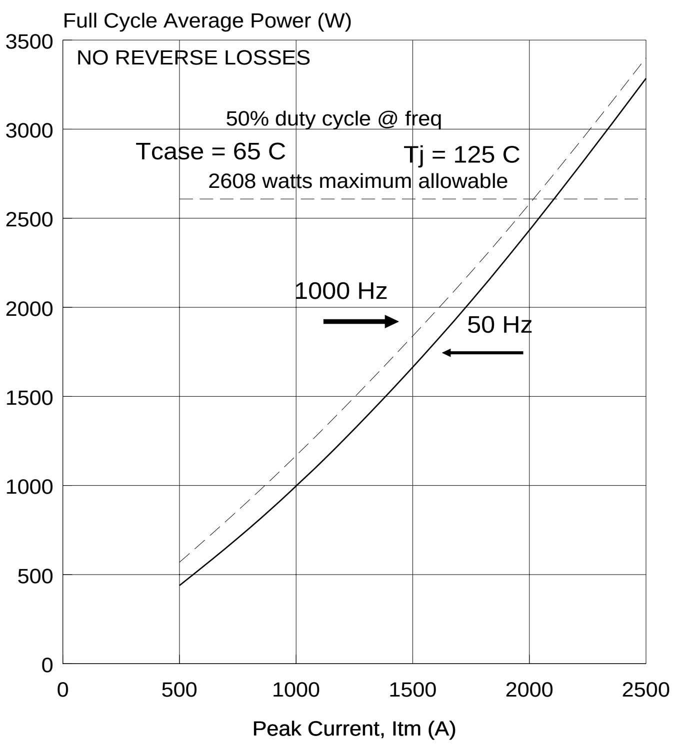
V845snp

Peak Current Capability
versus operating frequency
half sine & trapezoidal @ 50% duty cycle



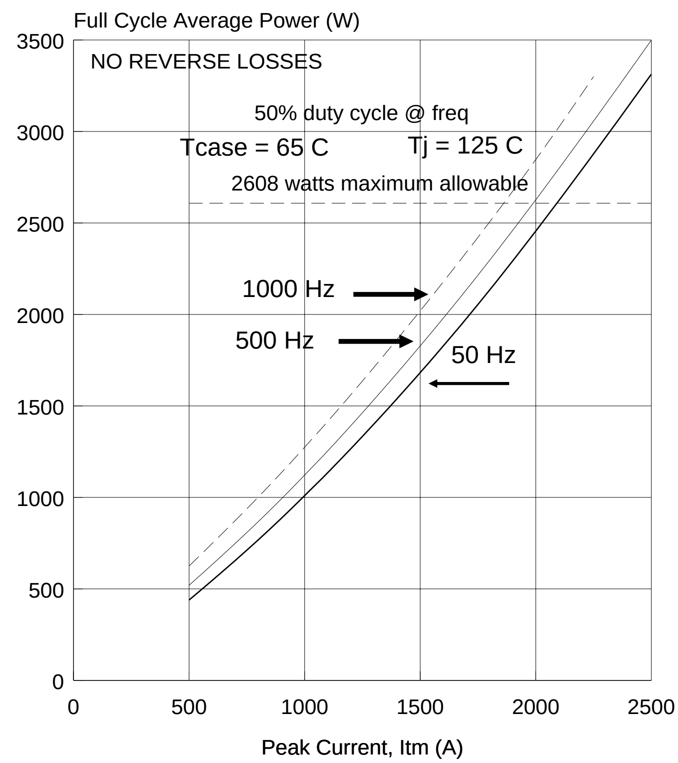
v845tc1

AVERAGE POWER LOSS
trapezoidal current wave
di/dt = 50A/us



V845Ptr2

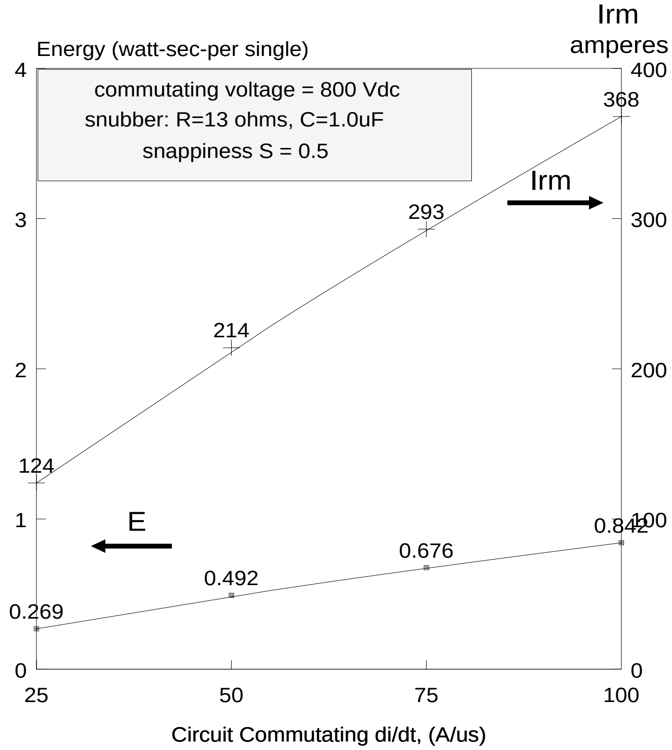
AVERAGE POWER LOSS
trapezoidal current wave
di/dt = 100A/us



V845Ptr1

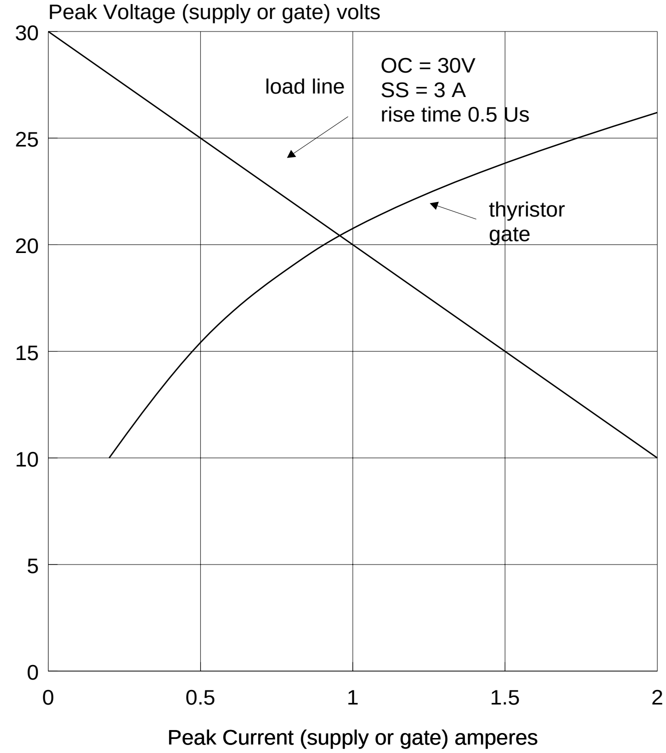
Maximum Peak Recovery Current and Reverse Commutation Energy

for recommended circuit conditions



v845re

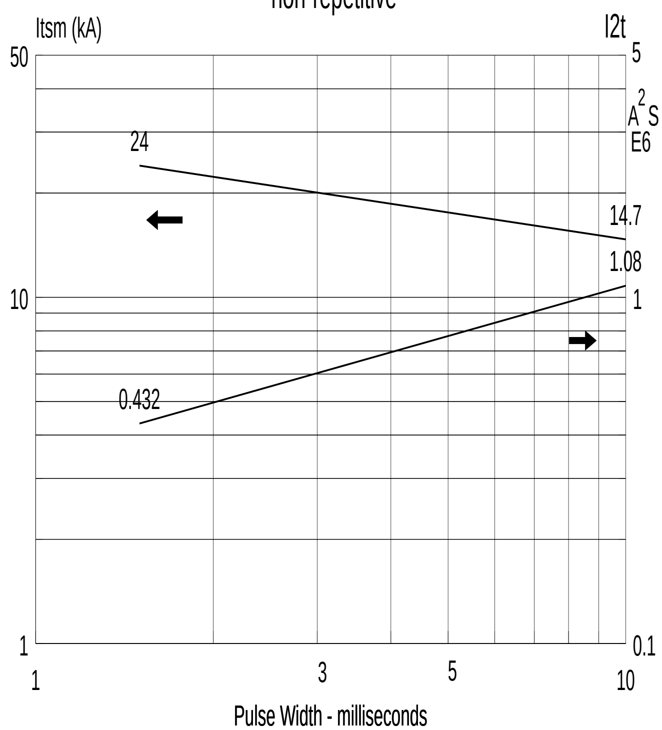
Recommended Gate Drive



w192: gatedr

Surge On-State Current Peak Half-Sine vs. Pulse Length

non-repetitive



v845itsm

Maximum Repetitve Snubber Discharge