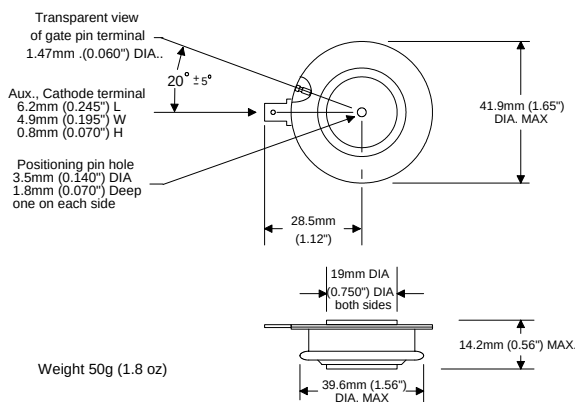


D package

JEDEC: TO-200AB



Part number scheme

D T 03 N 12 KNX
 1 2 3 4 5 6

- 1) Package designation
- 2) Thyristor designation (i.e. SCR)
- 3) Series number
- 4) Designates standard recovery time
- 5) Voltage Multiplier (example: 12 x 100 = 1200)
- 6) Proprietary suffix

Features:

- ✓ All diffused silicone.
- ✓ Center amplifying gate.
- ✓ Standard recovery time for phase control applications.
- ✓ Disk press package (nick named, Hockey Puck)
- ✓ Metal and ceramic package construction.
- ✓ Double side cooling.

Voltage

Parameter	Symbol	Rating	Units
Maximum Repetitive Off-State Voltage Notes: 1, 3, 4, 5, 6, 7	V_{DRM}	1200 ~ 2000	Volts
Maximum Repetitive Reverse Voltage Notes: 1, 3, 4, 5, 6	V_{RRM}	1200 ~ 2000	Volts
Maximum non repetitive Surge of Reverse Voltage Notes: 2, 3, 4, 5, 6	V_{RSM}	$V_{RRM} + 100$	Volts
Critical rate of rising off-state Voltage, Linear to 80% of V_{DRM} Note: 2	dv/dt	200	$V/\mu s$
Note 1: T_J 25°C. Note 2: T_J 125°C. Note 3: Measured at the peak of the sine wave, Note 4: Below 0°C derate V_{DRM} and V_{RRM} 10%. Note 5: V_{DRM} and V_{RRM} have I_{DRM}, I_{RRM} of up to 35mA. Note 6: V_{DR} and V_{RR} have typical I_{DR}, I_{RR} of 2~7mA. Note 7: For DC applications derate V_{DRM} 45%.			
Specifying voltage:	1400V, DT03N14 1200V, DT03N12	1800V, DT03N18 2000V, DT03N20	Above 2000V inquire for availability.

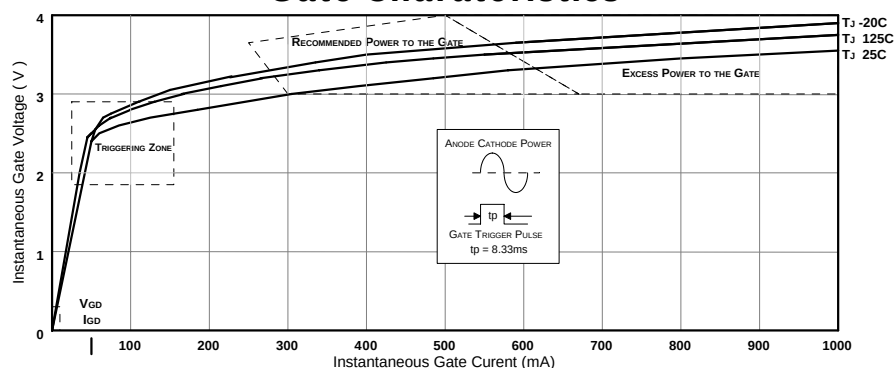
Gate

Parameter	Symbol	Rating			Units
Gate Trigger Voltage Note 3	V_{GT}	Temp.	Typ.	Max.	Volts
		-20° C	2.3 ~ 2.8	3	
		25° C	2.0 ~ 2.4		
		125° C	1.9 ~ 2.3		
Maximum Gate Trigger Current Notes 1,3	I_{GT}	300			mA
Minimum Forward Current to Latch on-state Notes 1, 5	I_L	300			mA
Maximum permissible Gate Voltage not to Trigger Notes 1,3	V_{GDM}	250			mV
Maximum permissible Gate Current not to Trigger Notes 1, 3	I_{GDM}	10			mA
Maximum peak non repetitive Gate Voltage Notes 2, 3	V_{GM}	8.4			Volts
Maximum Negative Gate Voltage Notes 2, 4	- V_{GM}	5			Volts
Maximum non repetitive Gate Current Notes 2, 3	I_{GM}	3.7			Amperes
Maximum Repetitive Gate Current Notes 2, 3	I_{GRM}	1			Amperes
Average Gate Power (recommended) Note 2, 3	$P_{G(AVE)}$	0.9 ~ 2			Watts
Note 1: T_J 25°C. Note 2: T_J 125°C. Note 3: Rectangular pulse. t_{on} ≤ 8.3 ms. Note 4: Rectangular -V_{OC} pulse. t_{on} ≤ 8.3 ms. Note 5: Test conditions: I_{OC} R_i = 120.					

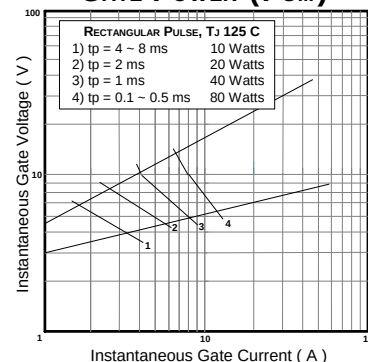
Note 1: T_J 25°C. Note 2: T_J 125°C. Note 3: Rectangular pulse, $t_p \leq 8.3$ ms. Note 4: Rectangular $-V_{DC}$ pulse, $t_p \leq 8.3$ ms. Note 5: Test conditions: I_{DC} $R_L = 12\Omega$.

These graphs depict a typical device, each device has unique characteristics

Gate Characteristics



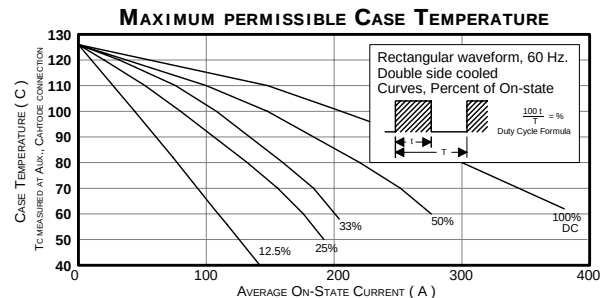
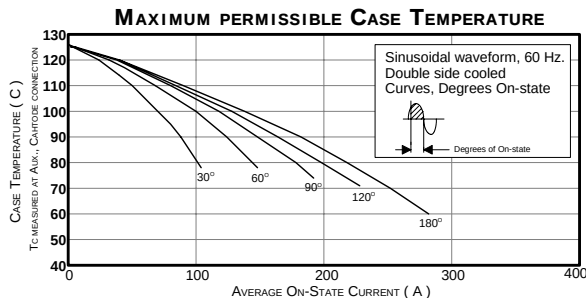
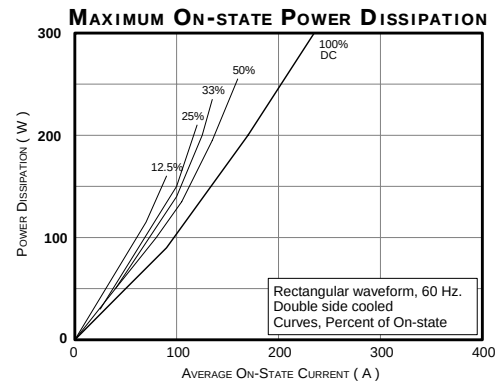
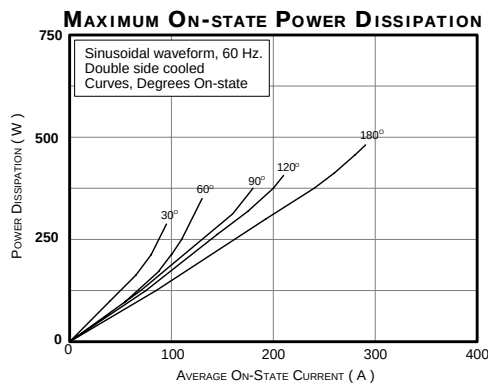
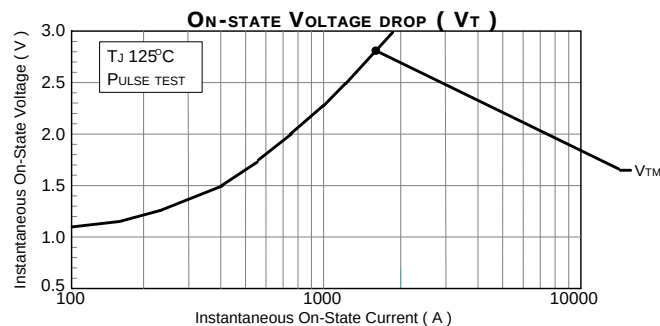
Maximum non repetitive GATE POWER (PGM)



Current

Parameter	Symbol	Rating	Units
Maximum, Average, On state, Current Notes: 3, 4	$I_{T(AVE)}$	280	Amperes
Maximum, RMS, On state, Current Notes: 3, 5	$I_{T(RMS)}$	440	Amperes
Maximum non repetitive, Surge, On state, Current, with no reverse voltage reappplied. Notes: 2, 4	$I_{TSM} 0\%V_{RRM}$	3.5	kA
Maximum non repetitive, Surge, On state, Current, with maximum reverse voltage reappplied. Notes: 2, 4	$I_{TSM} 100\%V_{RRM}$	3	kA
Critical rate of rising On-state Current, non repetitive Note: 6, 7	di/dt	300	A/ μ s
Holding Current Notes: 1, 5	I_H	200	mA
I_{DR} = Repetitive, Off-State, leakage Current (typical) Note: 1 I_{RR} = Repetitive, Reverse, leakage Current. (typical) Note: 1	$I_{DR} \& I_{RR}$	2 ~ 5	mA
I_{DRM} = Maximum (threshold), Repetitive, Off-State, Current. Note: 1 I_{RRM} = Maximum (threshold), Repetitive, Reverse, Current. Note: 1	$I_{DRM} \& I_{RRM}$	25	mA
Fuse's absolute maximum $I^2 t$ with no reverse voltage reappplied Note: 2, 4	$I^2 t, 0\% V_{RR}$	50	kA
Fuse's absolute maximum $I^2 t$ with up to 80% of V_{RRM} reappplied Note: 2, 4	$I^2 t, \leq 80\% V_{RRM}$	35	kA
Reverse Recovery Charge (C_s = Stored Charge)	Q_{RR}	Consult factory	μC_s
Note 1: T_J 25°C. Note 2: T_J 125°C. Note 3: T_{CASE} 55°C, double side air cooled. Note 4: 180° conduction, 60Hz sine wave. Note 5: Test conditions: I_{DC} $R_L = 12\Omega$. Note 6: Switching from $V_{DRM} \leq 1000V$ Note 7: In addition to 0.2μF and 20Ω snubber circuit			

These graphs depict a typical device, each device has unique characteristics



Thermal & Mechanical

Parameter	Symbol	Rating	Units
Operating Temperature Range	T_J	-40° ~ 125°	°Celsius
Maximum Thermal resistance, Junction to Case Notes: 1, 3, 5	R_{th-J-C}	0.06	°C/W
Maximum Thermal resistance, Case to Heat Sink Notes: 1, 2, 3, 4, 5	$R_{th-C-HS}$	0.03	°C/W
Mounting Pressure		320 ~ 400 700 ~ 900	kg lb.
Note 1: Recommended mounting pressure applied Note 2: Mounting surfaces flat and greased Note 3: Double side cooled Note 4: Case Temperature measured at aux., cathode Note 5: 180° on-state			