

FAST SWITCHING & ASYM

Series Type	Silicon Diameter	Repetitive Peak Voltage Range	Non-Repetitive Peak Voltage Range	Peak Off-state and Reverse Current at T _{vj}	Mean On-state Current T _{HS} = 65°C	Surge Current at Max. T _{vj} and 50% V _{RRM}	I ² t for Fusing at Max. T _{vj} 10ms Value	On-state Voltage at Peak Current at 125°C		Virtual Junction Temperature	Th Res
								V _{TM} V	I _{TM} A		
	mm	V _{DRM} V _{RRM} V	V _{DSM} V _{RSM} V	I _{RM} I _{DM} mA	I _{T(AV)} A	I _{TSM} kA	I ² t A ² s × 10 ³	V _{TM} V	I _{TM} A	T _{vj} °C	R _θ
BUTTON CAPSULE FAST TURN-OFF THYRISTORS											
DCR845	38.0	1200-2000	1300-2100	50	605	8.5	361	1.85	1000	125	0
DCR849	38.0	1200-2000	1300-2100	50	545	8.0	320	2.10	1000	125	0
DCR853	38.0	400-1200	500-1300	50	655	13.0	845	1.50	1000	125	0
DCR855	38.0	600-1400	700-1500	50	670	9.4	441	1.70	1000	125	0
DCR858	38.0	600-1200	700-1300	50	520	13.0	845	2.00	1000	125	0
DCR859	38.0	600-1400	700-1500	50	600	9.0	405	2.00	1000	125	0
DCR1043	50.0	100-1200	200-1300	50	985	23.0	2645	1.80	2000	125	0
DCR1045	50.0	1200-2000	1300-2100	100	855	15.0	1125	2.0	2000	125	0
DCR1046	50.0	300-1400	400-1500	100	930	20.0	2100	1.90	2000	125	0
DCR1048	50.0	100-1200	200-1300	100	730	15.0	1125	2.30	2000	125	0
DCR1049	50.0	1200-2000	1300-2100	100	760	13.0	840	2.70	2000	125	0
DCR1053	50.0	2000-2500	2100-2600	150	950	16.0	1280	1.90	2000	125	0

Series Type	Voltage Grade Available	Mean On-state Current at 180° half sine		RMS Current	Continuous On-state Current at 85°C	Surge Current and Fusing at Max. T _{vj} and 100% V _{RRM} 10ms Value		Rate of Rise of On-state Current to twice I _{T(AV)} Gate Source 20V o/c, 10ohms t _r = 0.5μs to 1 Amp	Rate of Rise of Off-state Voltage at 50% V _{DRM} T _v = 125°C	Peak Forward Gate Voltage	Peak Forward Gate Current	Pe Gs Pot
		I _{T(AV)} at T _{case} A	°C			I _{RMS} A	I _T A					
	V _{DRM} V	I _{T(AV)} at T _{case} A	°C	I _{RMS} A	I _T A	I _{TSM} A	I ² t A ² s	dI/dt A/μs	dV/dt V/μs	V _{FGM} V	I _{FGM} A	PG V
FAST TURN-ON THYRISTORS												
XT2104	400- 800	8	55	12	12 at 50°C	100	50	1000	100	10	2	
XT2108	600-1400	25	75	40	25	370	600	2000	300	40	10	4
ASYMMETRIC THYRISTORS												
ACR22	400-1200	22	70	35	22	220	242	2000	500	40	10	4
ACR25	400- 800	25	75	40	25	370	600	2000	500	40	10	4

METRIC THYRISTORS

Formal Instance i.c.	Rate of Rise of On-state Current	Rate of Rise of Off-state Voltage T _J = 125°C	Minimum Turn-off Time (1)	Maximum Recovered Charge	Gate Trigger Current V _{DWM} = 5V at 25°C	Gate Trigger Voltage V _{DWM} = 5V at 25°C	Weight	Clamping Force	Outline
h(j-h) C/W	dI/dt A/μs	dV/dt V/μs	t _q μs	Q _{rr} μC	I _{GT} mA	V _{GT} V	g	kgf	
045	800	>1000	60	650	350	3.5	310	1225	G
045	500	>1000	40	400	350	3.5	310	1225	G
045	1000	>2000	25	280	350	3.5	310	1225	G
045	1000	> 800	20	400	350	3.5	310	1225	G
045	1000	> 800	12	140	350	3.5	310	1225	G
045	1000	> 800	15	300	350	3.5	310	1225	G
028	1000	>1000	25	300	350	3.5	500	1990	F
028	700	>1000	70	1000	350	3.5	500	1990	F
028	1000	>1000	35	400	350	3.5	500	1990	F
028	1000	>1000	15	150	350	3.5	500	1990	F
028	700	>1000	50	600	350	3.5	500	1990	F
028	700	>1000	150	2500	350	3.5	500	1990	F

(1) Turn-off time test conditions: I_{TM} = 1000A, dI/dt = 60A/μs, V_R = 50V, dV/dt = 200V/μs, T_J = 125°C

Part Number	Gate Trigger Voltage V _{DWM} = 5V T _{case} = 25°C	Gate Trigger Current V _{DWM} = 5V T _{case} = 25°C	On-state Voltage at Peak Current T _{case} = 25°C		Peak Off-state Current	Peak Reverse Current	Virtual Junction Temperature Off-state	Thermal Resistance Junction to Heatsink 180° d.c. Sinusoidal		Turn-off Time	Delay Time	Outline
	V _{GT} V	I _{GT} mA	V _{TM} V	I _{TM} A	I _{DM} mA	I _{RM} mA	T _{vj} °C	R _{th(j-h)} °C/W	R _{th(j-h)} °C/W	t _q μs	t _d ns	
50	2.5	60	2.0	20	5	5	105	2.70	—	50	250	2
0	3.0	100	2.0	100	10	10	125	1.05	—	60	250	3U
0	3.0	200	2.7	100	10	10	125	1.05	—	5.5	250	3U
0	3.0	200	2.2	100	10	10	125	1.05	—	<4	250	3U

1. Nomenclature Fast Turn-on and Asymmetric Thyristors

The MEDL Type No. for Fast Turn-on and Asymmetric Thyristors is made up as follows:

Position ACR 25 U 04 X G
 1 2 3 4 5 6 7

Position 1 ACR — defines asymmetric thyristor
 XT — Fast turn-on thyristor

Position 2 Gives an approximate indication of mean on-state current ($I_T(AV)$) of device

Position 3 U indicates basic imperial dimensions with U.N.F. thread

Position 4 Defines voltage grades available according to the following table:

Type Number	Repetitive peak voltages		Non-repetitive peak voltages	
	V _{DRM}	V _{RRM}	V _{DSM}	V _{RSM}
X5	50	50	75	75
01	100	100	150	150
02	200	200	250	250
03	300	300	350	350
04	400	400	500	500
05	500	500	600	600
06	600	600	700	700
08	800	800	900	900
10	1000	1000	1100	1100
11	1100	1100	1200	1200
12	1200	1200	1300	1300

Position 5 Defines device dV/dt rating. The ratings and characteristics table give the nominal standard figures.

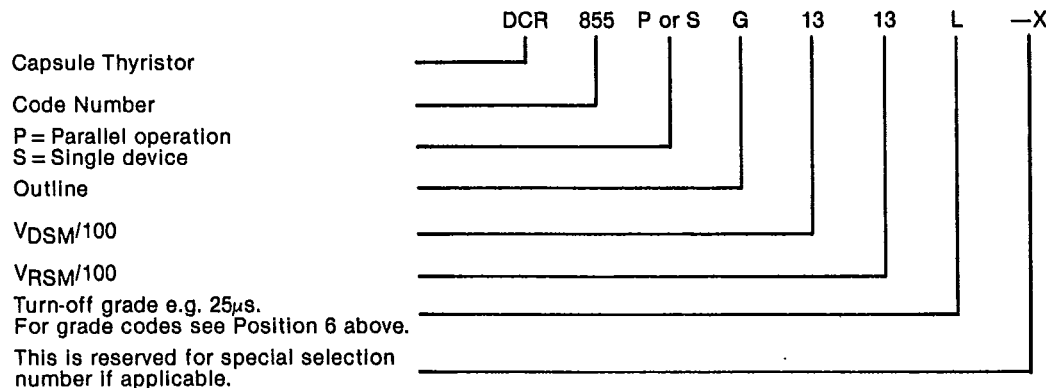
H means 20V/μs	R means 500 V/μs	A means 1200V/μs
F means 50V/μs	T means 600 V/μs	B means 1400V/μs
G means 100V/μs	U means 700 V/μs	C means 1600V/μs
J means 200V/μs	V means 800 V/μs	
L means 300V/μs	W means 900 V/μs	
N means 400V/μs	X means 1000 V/μs	

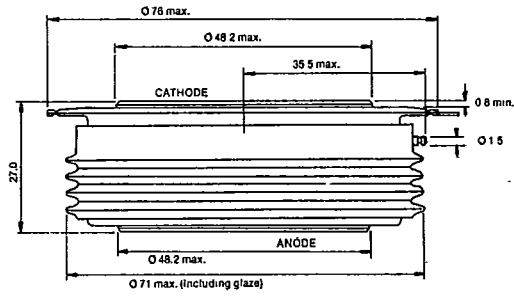
Position 6 Defines turn-off grades. All thyristors for converter user are defined by the letter 'Y' in this position.

Y means converter grade	D means 8μs	P means 40μs
K means 1μs	C means 12μs	R means 45μs
J means 2μs	B means 15μs	S means 50μs
H means 3μs	A means 20μs	T means 60μs
G means 4μs	L means 25μs	V means 70μs
F means 5μs	M means 30μs	W means 85μs
E means 6μs	N means 35μs	X means 100μs

Position 7 This is reserved to define any special selections other than those previously mentioned.

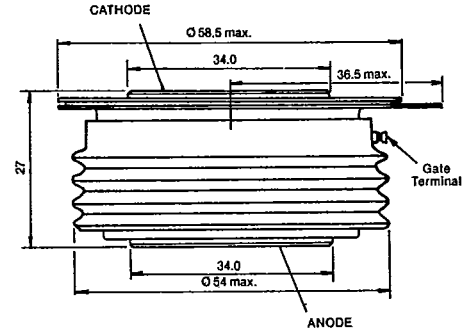
2. Nomenclature of High Power Thyristors





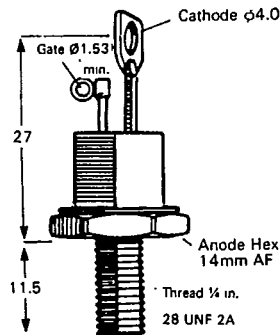
Weight 500g
 Minimum clamping force 18 kN
 Maximum clamping force 22 kN

F



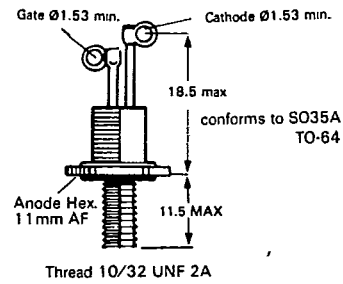
Weight 310 g
 Minimum clamping force 9.5 kN
 Maximum clamping force 12 kN

G



Conforms to SO-36
 TO-48
 Weight 10.5 g
 Torque Max. 4.0 Nm
 Rec. 3.5 Nm

3U



conforms to S035A
 TO-64
 Weight 4 g
 Torque Max. 1.7 Nm
 Rec. 1.5 Nm

2

All dimensions are in mm.