Ordering number : EN819D

SANYO

No.819D

DRA5

Silicon Diffused Junction Type

5.0A Reverse Blocking Thyristor

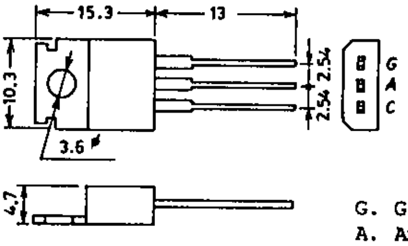
Features

- Glass passivation for high reliability
- Peak OFF-state (reverse) voltage : −100 to −600V
- Average ON-state current : 5A
- TO-220 package
- Weight : 2g

Absolute Maximum Ratings at Ta = 25°C			DRA5B	DRA5C	DRA5E	DRA5G	unit
Repetitive Peak OFF-State Voltage	V_{DRM}		100	200	400	600	V
Non-Repetitive Peak Reverse Voltage	V_{RSM}		−150	−300	−500	−700	V
Repetitive Peak Reverse Voltage	V_{RRM}		−100	−200	−400	−600	V
Average ON-State Current	$I_{T(AV)}$	Tc = 91°C, single-phase half-wave	→	→	→	5	A
RMS ON-State Current	$I_{T(RMS)}$		→	→	→	7.8	A
Surge ON-State Current	I_{TSM}	Sine half-wave 1 cycle, 50Hz	→	→	→	80	A
Amperes Squared-Seconds	$\int i^2T \cdot dt$		→	→	→	32	A²S
Peak Gate Power Dissipation	P_{GM}		→	→	→	5	W
Average Gate Power Dissipation	$P_{G(AV)}$		→	→	→	0.5	W
Peak Gate Forward Current	I_{FGM}		→	→	→	2	A
Peak Gate Forward Voltage	V_{FGM}		→	→	→	10	V
Peak Gate Reverse Voltage	V_{RGM}		→	→	→	5	V
Junction Temperature	Tj		→	→	→	125	°C
Storage Temperature	Tstg		→	→	−40 to +125		°C

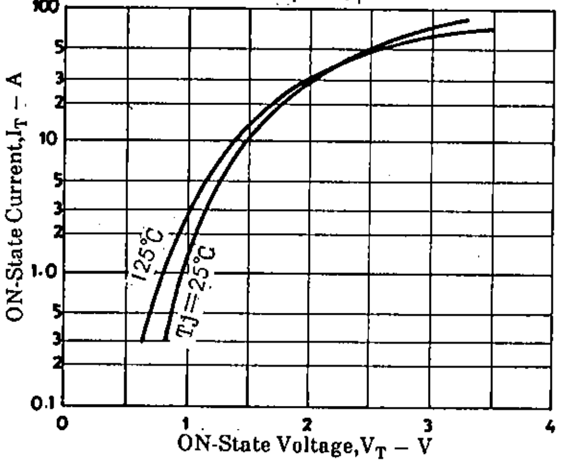
Electrical Characteristics at Ta = 25°C			min	typ	max	unit
Repetitive Peak OFF-State Current	I_{DRM}	$Tj = 125°C, V_D = V_{DRM}$			2	mA
Repetitive Peak Reverse Current	I_{RRM}	$Tj = 125°C, V_R = V_{RRM}$			2	mA
ON-State Voltage	V_T	$I_T = 15A$			1.6	V
Critical Rate of Rise of OFF-State Voltage	dv/dt	$Tc = 125°C, V_D = 2/3V_{DRM}$	30			V/µs
Holding Current	I_H	$R_L = 100\Omega$			60	mA
Gate Trigger Current	I_{GT}	$V_D = 6V, R_L = 10\Omega$			40	mA
Gate Trigger Voltage	V_{GT}	$V_D = 6V, R_L = 10\Omega$			1.5	V
Gate Nontrigger Voltage	V_{GD}	$Tc = 125°C, V_D = 2/3V_{DRM}$	0.2			V
Thermal Resistance	$R_{th(j-c)}$				3	°C/W

Package Dimensions 1104
(unit: mm)

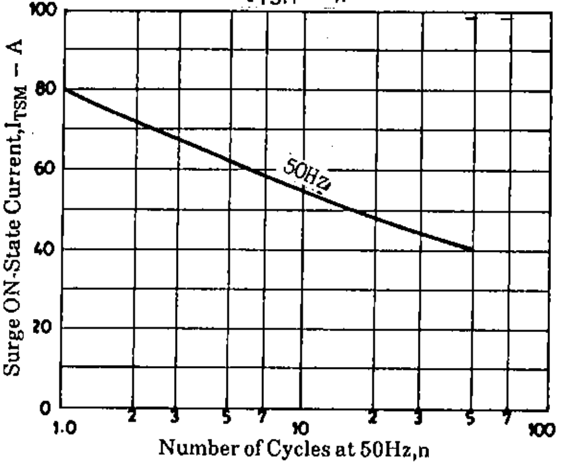


G. Gate
A. Anode
C. Cathode

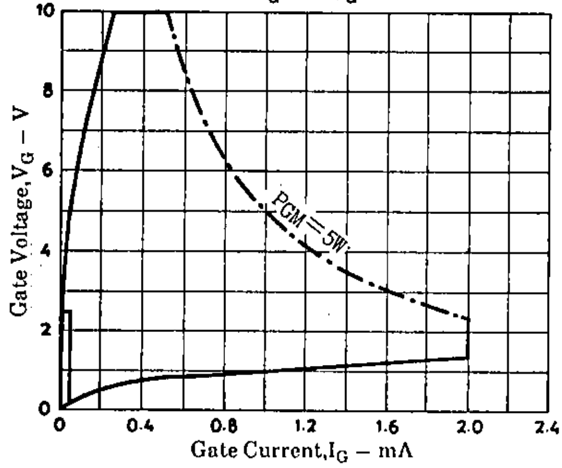
I_T - V_T



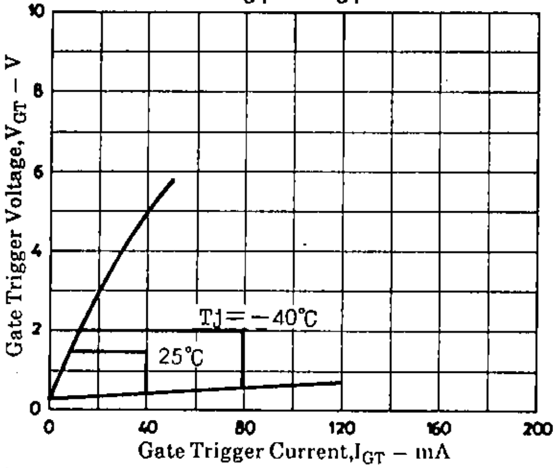
I_{TSM} - n



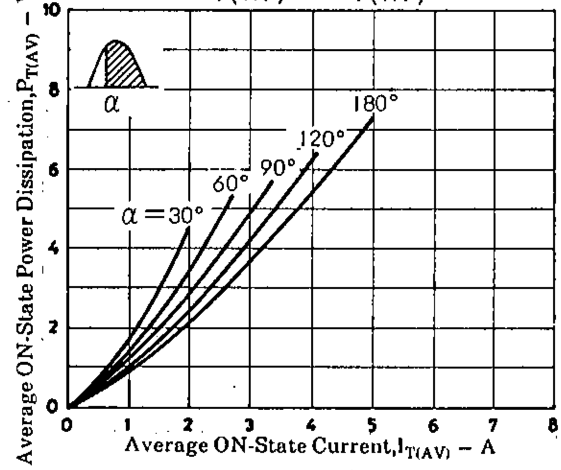
V_G - I_G



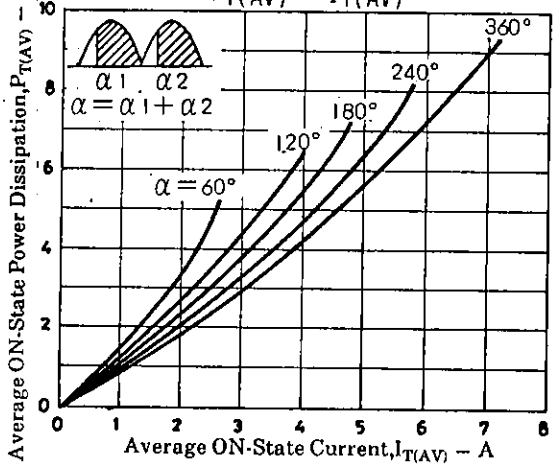
V_{GT} - I_{GT}



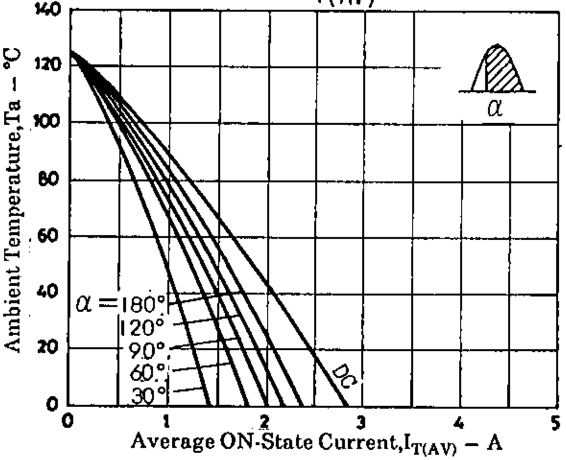
$P_{T(AV)}$ - $I_{T(AV)}$



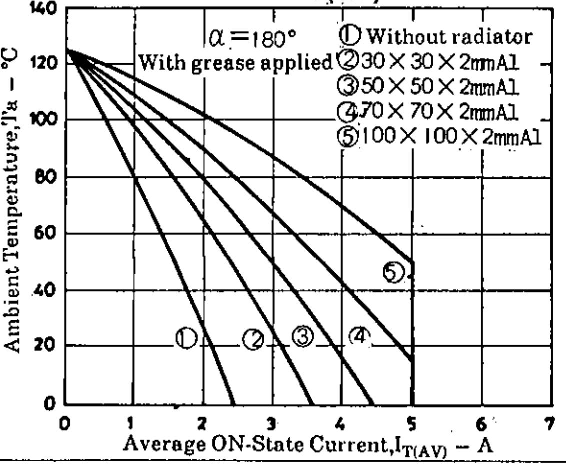
$P_{T(AV)}$ - $I_{T(AV)}$

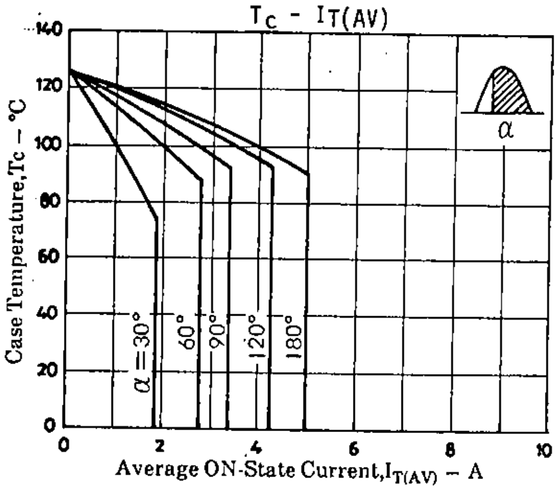


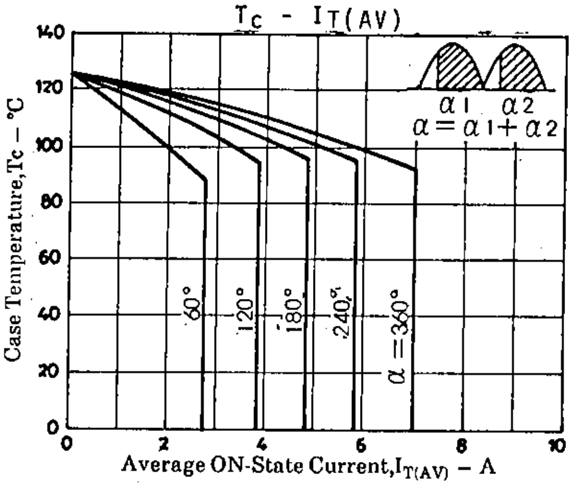
Ta - $I_{T(AV)}$

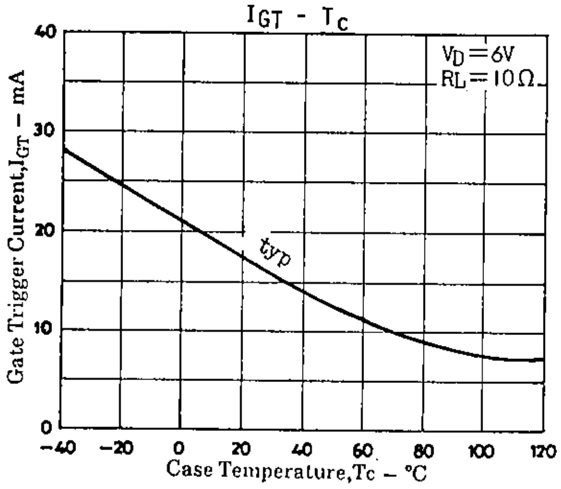


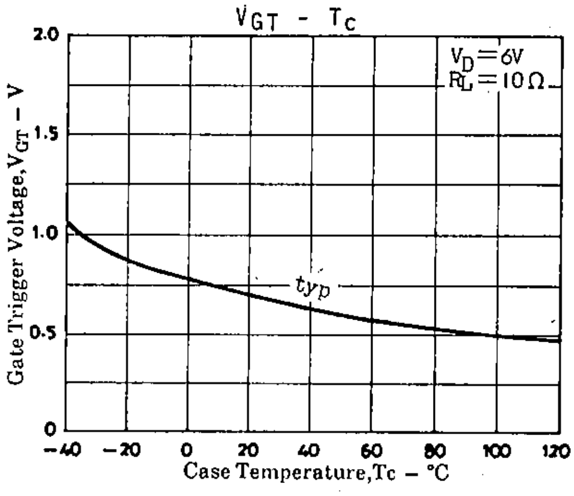
Ta - $I_{T(AV)}$

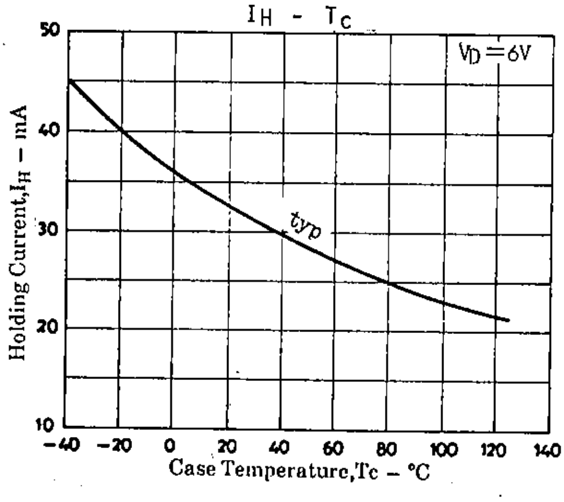


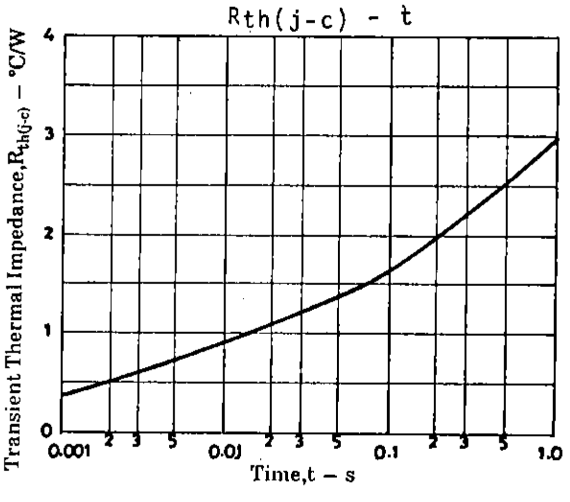

Tc - IT(AV)
α
α = 30°
60°
90°
120°
180°
Case Temperature,Tc – °C
0
20
40
60
80
100
120
140
0
2
4
6
8
10
Average ON-State Current,IT(AV) – A


Tc - IT(AV)
α1 α2
α=α1+α2
60°
120°
180°
240°
α = 360°
Case Temperature,Tc – °C
0
20
40
60
80
100
120
140
0
2
4
6
8
10
Average ON-State Current,IT(AV) – A


IGT - Tc
VD=6V
RL=10Ω
typ
Gate Trigger Current,IGT – mA
0
10
20
30
40
–40
–20
0
20
40
60
80
100
120
Case Temperature,Tc – °C


VGT - Tc
VD=6V
RL=10Ω
typ
Gate Trigger Voltage,VGT – V
0
0.5
1.0
1.5
2.0
–40
–20
0
20
40
60
80
100
120
Case Temperature,Tc – °C


IH - Tc
VD=6V
typ
Holding Current,IH – mA
10
20
30
40
50
–40
–20
0
20
40
60
80
100
120
140
Case Temperature,Tc – °C


Rth(j-c) - t
Transient Thermal Impedance,Rth(j-c) – °C/W
0
1
2
3
4
0.001
2
3
5
0.01
2
3
5
0.1
2
3
5
1.0
Time,t – s