

## RSF05G1-1P,RSF05G1-3P,RSF05G1-5P

### LOW POWER SWITCHING AND CONTROL APPLICATIONS

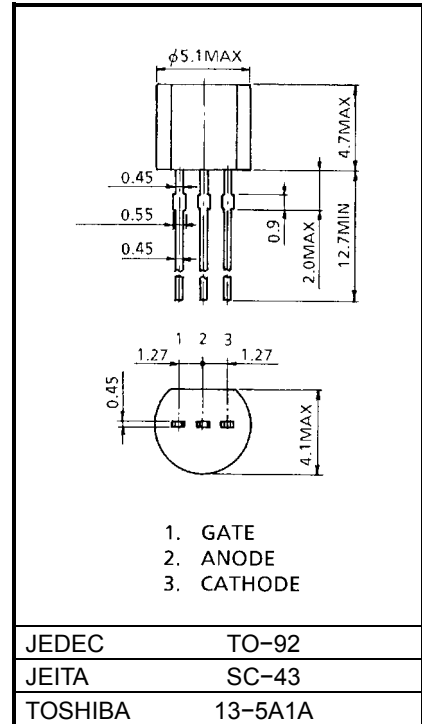
- Repetitive Peak Off-State Voltage :  $V_{DRM} = 400V$   
 Repetitive Peak Reverse Voltage :  $V_{RRM} = 400V$
- Average On-State Current :  $I_T(AV) = 500mA$
- Plastic Mold Type
- Reduce a Quantity of Parts and Manufacturing Process Because of Built-in RGK :  $RGK = 1k\Omega, 2.7k\Omega, 5.1k\Omega$  (Typical)

### MAXIMUM RATINGS

CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	RSF05G1-1P	$V_{DRM}$ $V_{RRM}$	400	V
	RSF05G1-3P		400	
	RSF05G1-5P		400	
Non-Repetitive Peak Reverse Voltage (Non-Repetitive < 5ms, $T_j = 0\sim 125^\circ C$ )	RSF05G1-1P	$V_{DSM}$	500	V
	RSF05G1-3P		500	
	RSF05G1-5P		500	
Average On-State Current (Half Sine Waveform)		$I_{T(AV)}$	500	mA
R.M.S. On-State Current		$I_{T(RMS)}$	800	mA
Peak One Cycle Surge On-State Current (Non-Repetitive)		$I_{TSM}$	9 (50Hz)	A
			10 (60Hz)	
$I^2t$ Limit Value		$I^2t$	0.4	$A^2s$
Critical Rate of Rise of On-State Current		$di/dt$	10	$A/\mu s$
Peak Gate Power Dissipation		$P_{GM}$	0.1	W
Average Gate Power Dissipation		$P_{G(AV)}$	0.01	W
Peak Forward Gate Voltage		$V_{FGM}$	3.5	V
Peak Reverse Gate Voltage		$V_{RGM}$	-5	V
Peak Forward Gate Current		$I_{GM}$	125	mA
Junction Temperature		$T_j$	-40~125	$^\circ C$
Storage Temperature		$T_{stg}$	-40~125	$^\circ C$

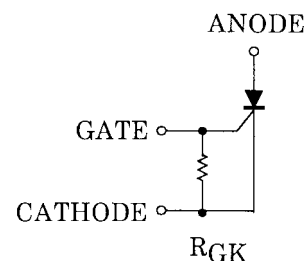
Note:  $di/dt$  Test Condition,  $i_G = 5mA$ ,  $t_{gw} = 10\mu s$ ,  $t_{gr} \leq 250ns$

Unit: mm



Weight: 0.2g

### EQUIVALENT CIRCUIT

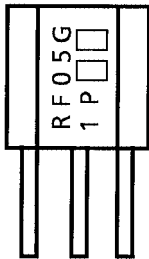


## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current		$I_{DRM}$ $I_{RRM}$	$V_{DRM} = V_{RRM} = \text{Rated}$	—	—	10	$\mu\text{A}$
Peak On-State Voltage		$V_{TM}$	$I_{TM} = 1\text{A}$	—	—	1.5	V
Gate Trigger Voltage		$V_{GT}$	$V_D = 6\text{V}, R_L = 100\Omega$	0.4	—	0.8	V
Gate Trigger Current	RSF05G1-1P	$I_{GT}$		400	700	1000	$\mu\text{A}$
	RSF05G1-3P			150	250	400	
RSF05G1-5P	80		160	250			
Holding Current	RSF05G1-1P	$I_H$	$I_{TM} = 1\text{A}, V_D = 6\text{V}$	—	—	6	mA
	RSF05G1-3P			—	—	3	
	RSF05G1-5P			—	—	2	
Resistor Between Gate and Cathode	RSF05G1-1P	$R_{GK}$	—	700	1000	1300	$\Omega$
	RSF05G1-3P			1890	2700	3510	
	RSF05G1-5P			3570	5100	6630	
Critical Rate of Rise of Off-State Voltage	RSF05G1-1P	$dv/dt$	$V_{DRM} = \text{Rated}$ Exponential Rise	—	200	—	V / $\mu\text{s}$
	RSF05G1-3P			—	70	—	
	RSF05G1-5P			—	40	—	
Gate Turn-On Time		$t_{gt}$	$V_D = \text{Rated}, i_G = 5\text{mA}$	—	—	1.5	$\mu\text{s}$
Thermal Resistance	Junction to Lead	$R_{th(j-l)}$	DC	—	—	40	$^{\circ}\text{C} / \text{W}$
	Junction to Ambient	$R_{th(j-a)}$		—	—	180	

## MARKING

Example : It is mark of RSF05G1-1P



Lot Number



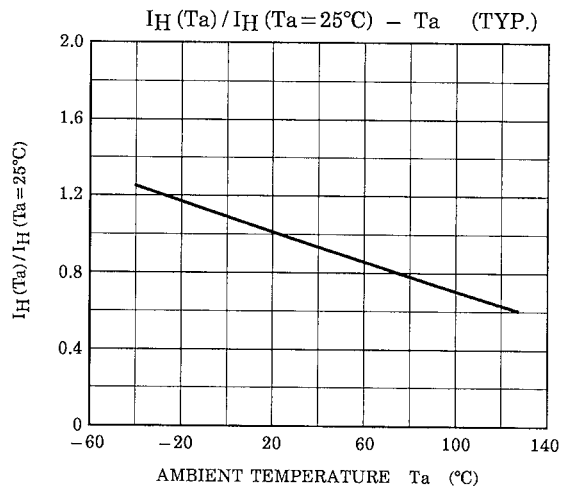
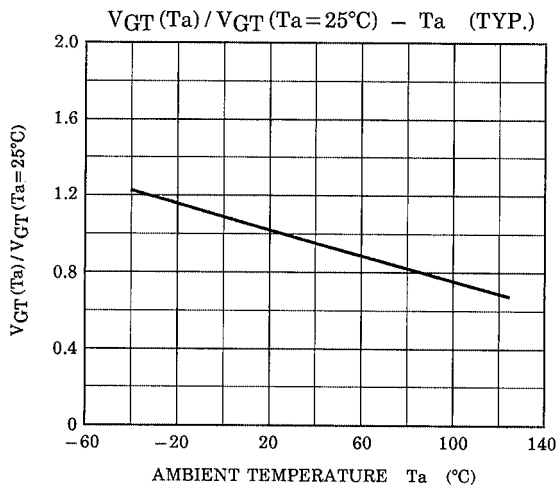
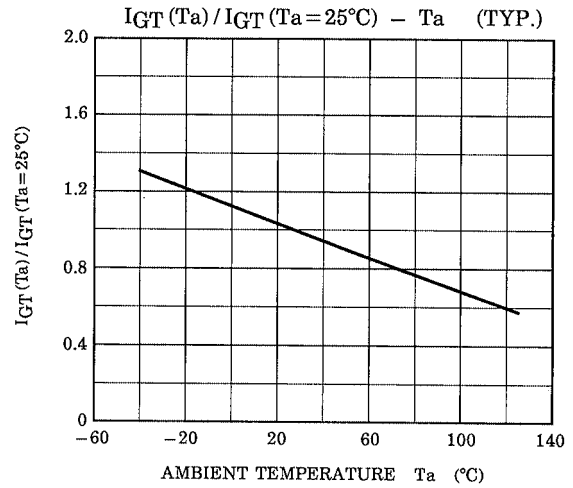
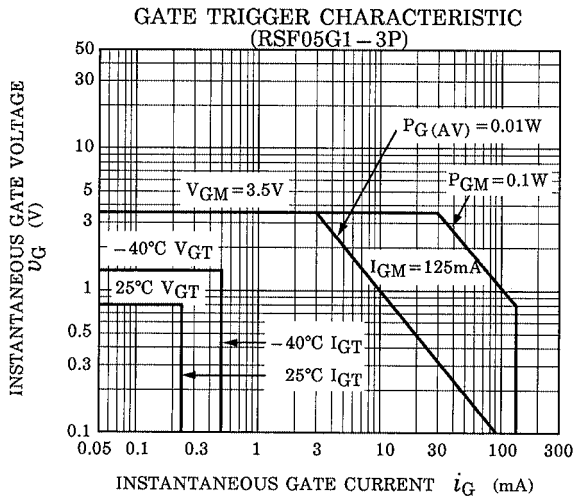
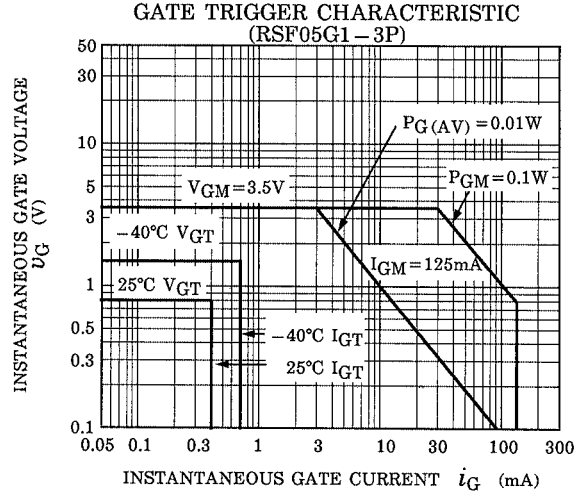
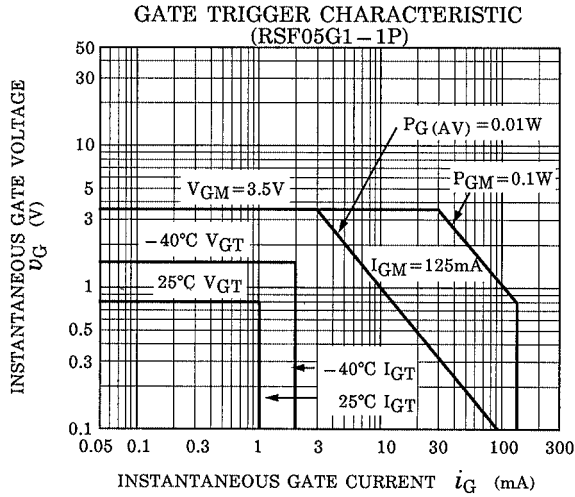
Month (Starting from Alphabet A)

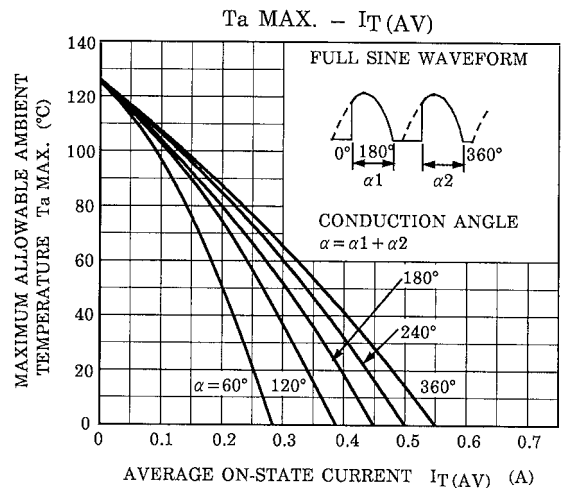
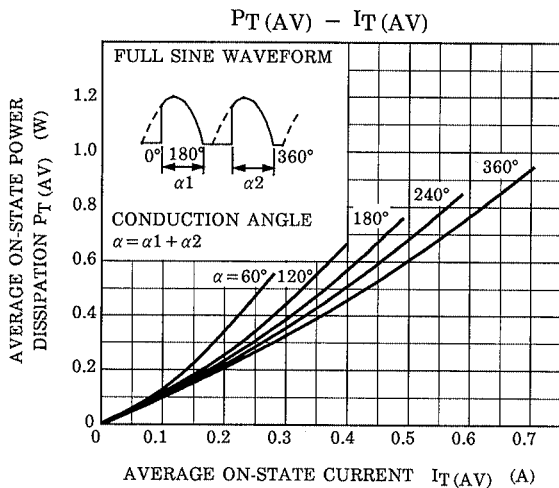
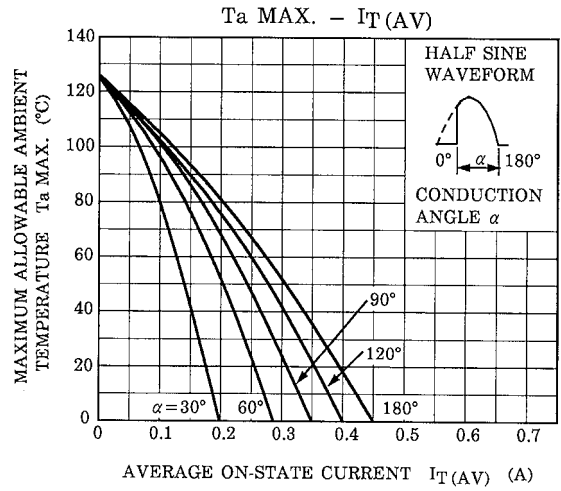
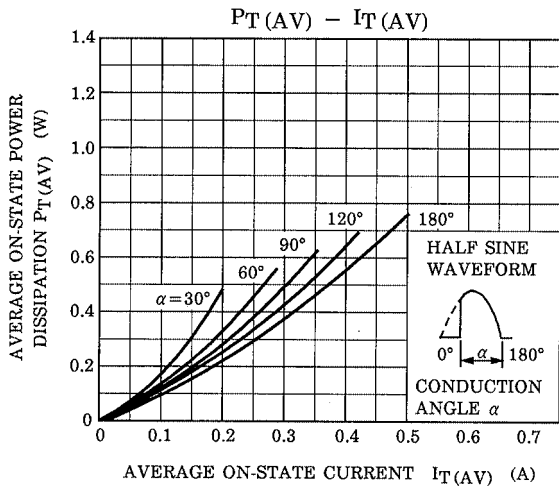
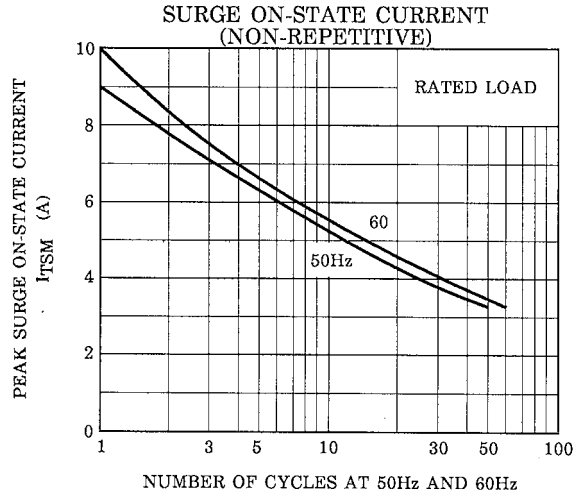
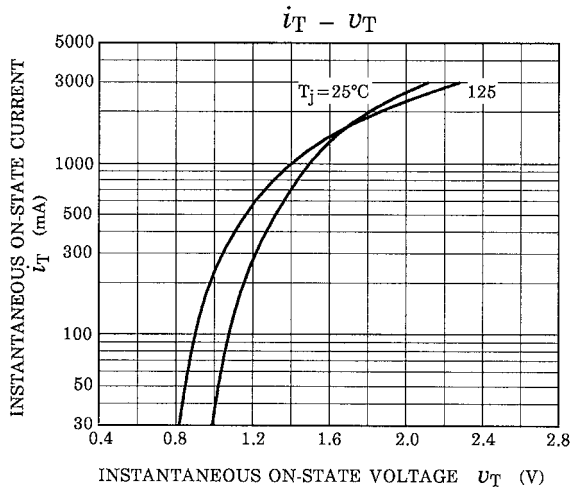
Year (Last Decimal Digit of the Current Year)

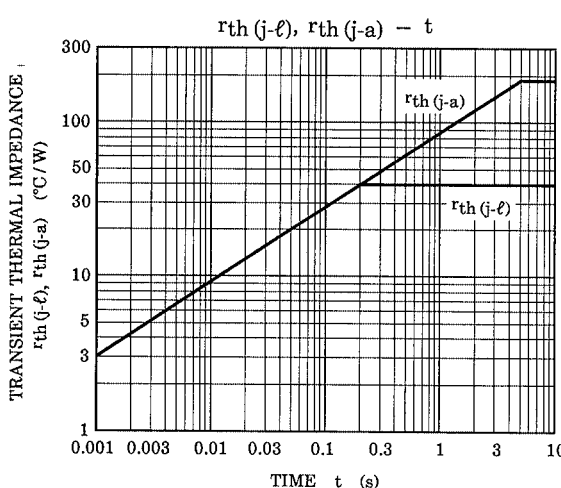
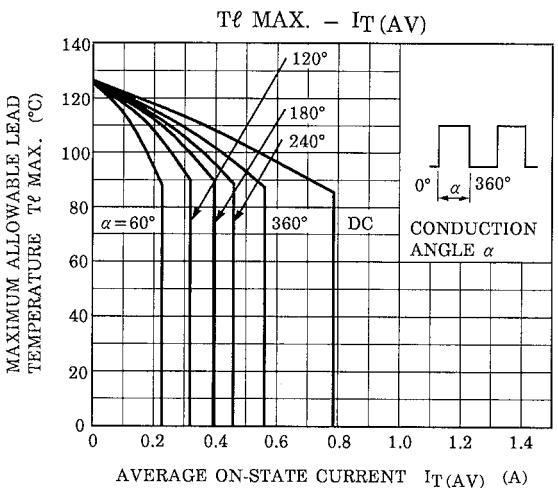
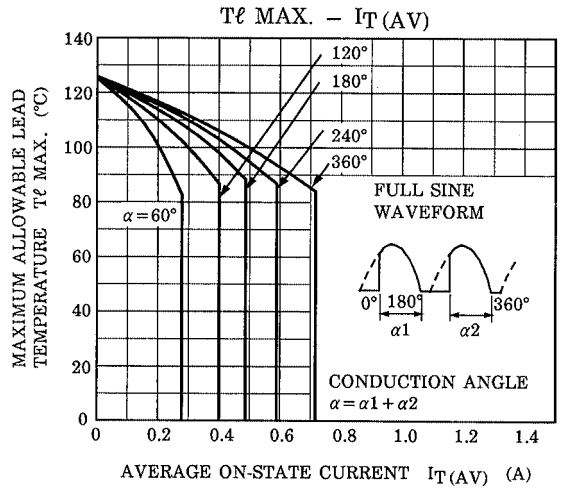
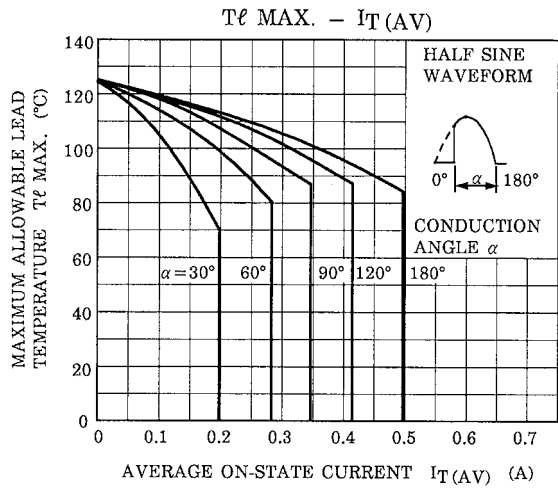
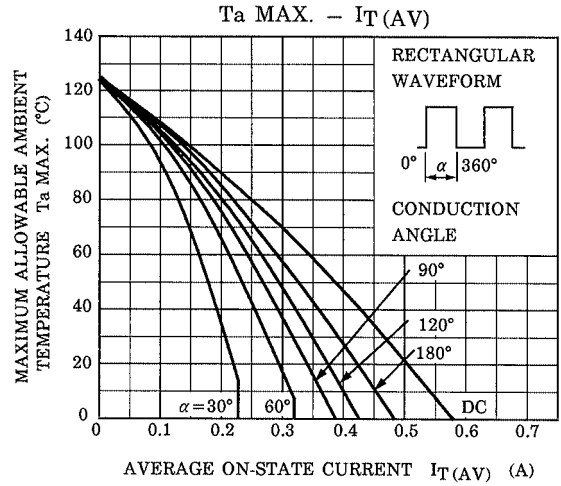
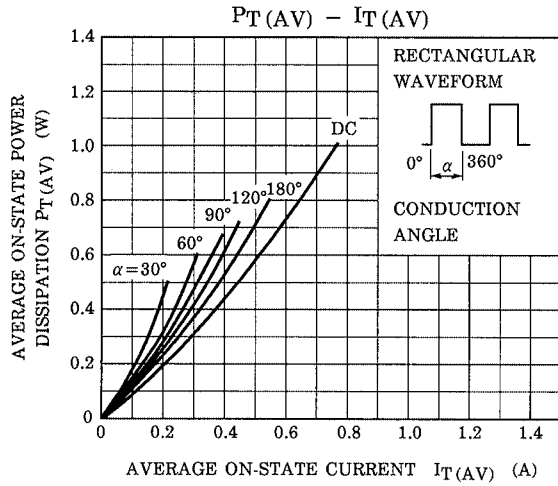
Example 8A : January 1998

8B : February 1998

8L : December 1998







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