

# S4M02600F(LS)

**SENSITIVE GATE  
SILICON CONTROLLED RECTIFIERS  
REVERSE BLOCKING THYRISTORS**

**SCRs 4 AMPERES RMS 600 VOLTS**

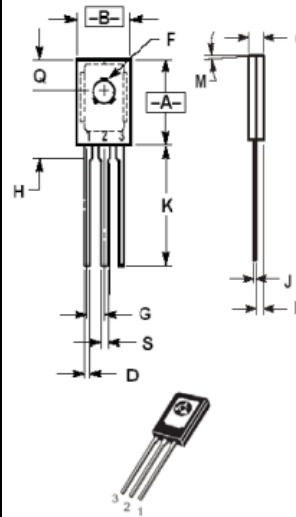
**FEATURES**

- Glass Passivated Junctions for Reliability and Uniformity
- Power Rated Economical Prices
- Practical Level Triggering and Holding Characteristics
- Flat, Rugged, Thermopad Construction for Low Thermal
- Resistance High Heat Dissipation and Durability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

**MECHANICAL DATA**

- Package: TO-126
- Package Material: Molded Plastic
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 Ⓔ③
- Weight: 0.658 grams(Approximate)

**TO-126**



T0126		
DIM.	MIN.	MAX.
A	10.16	11.43
B	7.12	8.38
C	2.29	3.04
D	0.64	0.88
F	2.54	3.3
G	2.04	2.54
H	-	2.54
J	0.39	0.63
K	15.12	16.63
M	3° TYP	
Q	3.31	4.44
R	0.89	1.65
S	0.64	0.88

**All Dimensions in millimeter**

PIN ASSIGNMENT	
1	Cathode
2	Anode
3	Gate

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25°C unless otherwise noticed)**

**ABSOLUTE RATINGS**

CHARACTERISTICS	SYMBOL	VALUE	UNIT
Peak Repetitive Off-State Voltage (T <sub>J</sub> = -40 to 110°C, Sine Wave, 50 to 60Hz; Gate Open)	V <sub>DRM</sub> V <sub>RRM</sub>	600	V
On-State RMS Current (180° Conduction Angles, T <sub>C</sub> = 80°C )	I <sub>T(RMS)</sub>	4	A
Peak Non-Repetitive Surge Current (1/2 Cycle, Sine Wave 60Hz, T <sub>J</sub> = 25°C)	I <sub>TSM</sub>	25	A
Circuit Fusing Consideration (t = 8.3ms)	I <sup>2</sup> t	2.6	A <sup>2</sup> s
Forward Peak Gate Power	P <sub>GM</sub>	1	W
Forward Average Gate Power	P <sub>G(AV)</sub>	0.1	W
Operating Junction Temperature Range	T <sub>J</sub>	-40 to +110	°C
Storage Temperature Range	T <sub>STG</sub>	-40 to +150	°C

- Notes:**
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. V<sub>DRM</sub> and V<sub>RRM</sub> for all types can be applied on a continuous basis. Ratings apply for zero or negative gate voltage; positive gate voltage shall not be applied concurrent with negative potential on the anode. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.

**RATING AND CHARACTERISTIC CURVES**

**S4M02600F**

**THERMAL CHARACTERISTICS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Thermal Resistance - Junction to Case - Junction to Ambient	RthJC	7.0	°C/W
	RthJA	75	
Maximum Lead Temperature for Soldering Purposes 1/8 from Case for 10 Seconds	TL	260	°C

**ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25°C unless otherwise noted)**

OFF CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Peak Repetitive Forward or Reverse Blocking Current (V <sub>AK</sub> = Rated V <sub>DRM</sub> and V <sub>RRM</sub> ; R <sub>GK</sub> = 1k Ohms)	I <sub>DRM</sub> T <sub>J</sub> = 25°C	--	--	10	µA
	I <sub>RRM</sub> T <sub>J</sub> = 110°C	--	--	200	

ON CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Peak Forward On-State Voltage (I <sub>TM</sub> = 8.0A Peak Pulse Width ≤ 1.0ms, Duty Cycle ≤ 1%)	V <sub>TM</sub>	--	--	2.2	V
Gate Trigger Current (V <sub>AK</sub> = 12V; R <sub>L</sub> = 100 Ohms) (1)	I <sub>GT</sub>	--	--	200	µA
Holding Current (V <sub>AK</sub> = 12V; R <sub>L</sub> = 100 Ohms)	I <sub>H</sub>	--	--	5.0	mA
Latch Current (V <sub>AK</sub> = 12V; R <sub>L</sub> = 100 Ohms) (1)	I <sub>L</sub>	--	--	10	mA
Gate Trigger Voltage (V <sub>D</sub> = 12V; R <sub>L</sub> = 100 Ohms)	V <sub>GT</sub>	--	--	1.0	V

DYNAMIC CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Critical Rate of Rise of Off-State Voltage (V <sub>AK</sub> = 0.67% Rated V <sub>DRM</sub> , Exponential Waveform T <sub>J</sub> = 110°C, R <sub>GK</sub> = 1k Ohm, )	dv/dt	--	10	--	V/µs

(1) R<sub>GK</sub> current is not included in measurement.

**RATING AND CHARACTERISTIC CURVES**

**S4M02600F**

Symbol	Parameter
$V_{DRM}$	Peak Repetitive Off State Forward Voltage
$I_{DRM}$	Peak Forward Blocking Current
$V_{RRM}$	Peak Repetitive Off State Reverse Voltage
$I_{RRM}$	Peak Reverse Blocking Current
$V_{TM}$	Peak On State Voltage
$I_H$	Holding Current

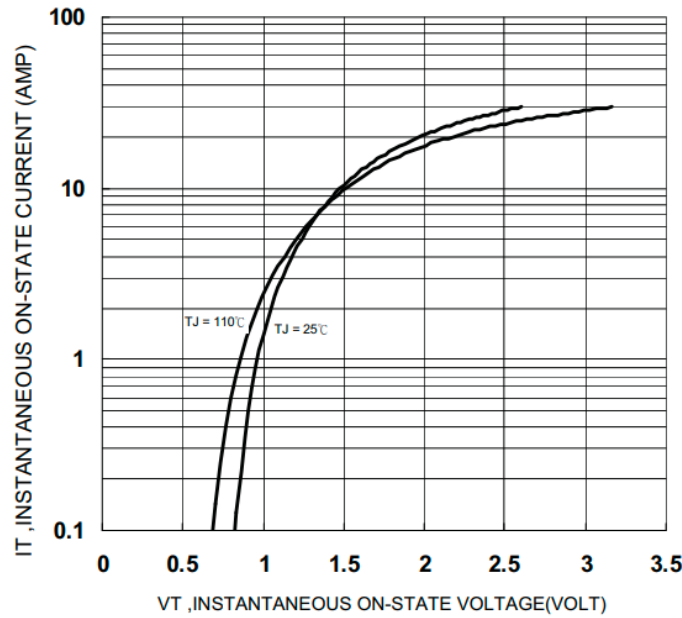
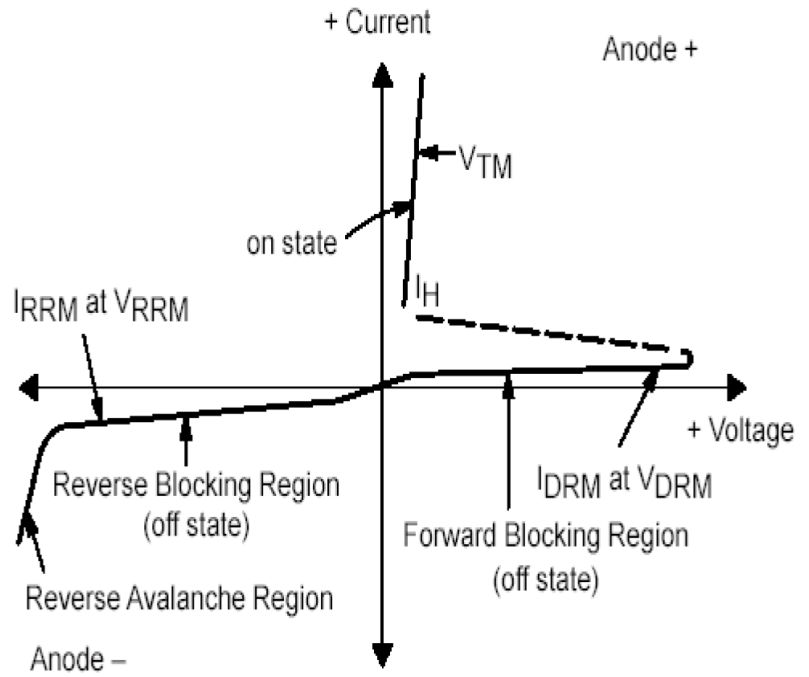
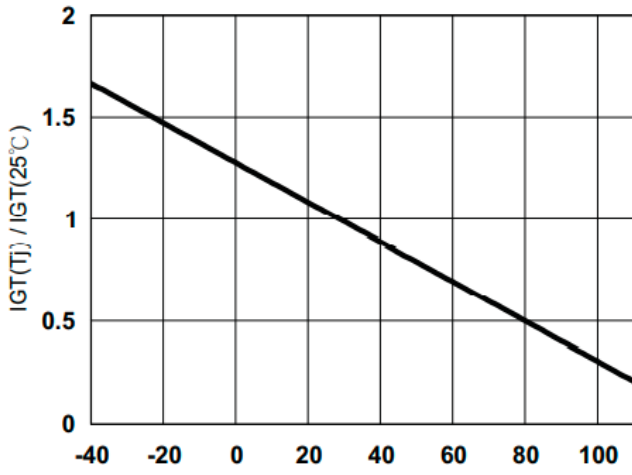


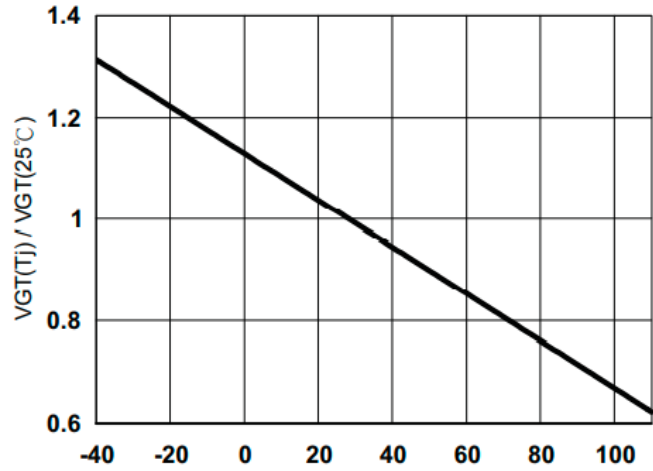
Figure 1. On-State Characteristics

**RATING AND CHARACTERISTIC CURVES**

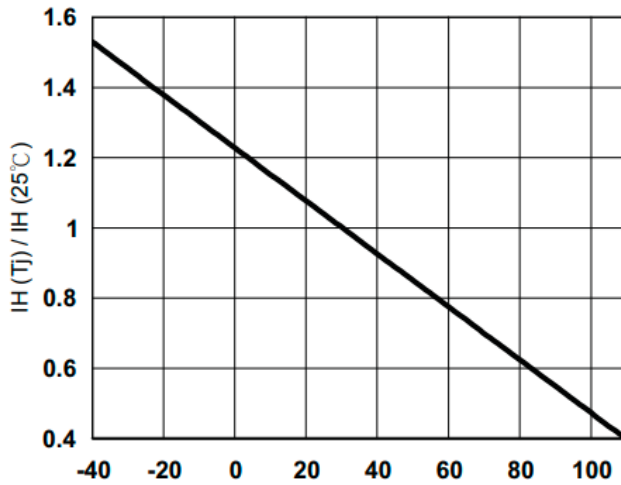
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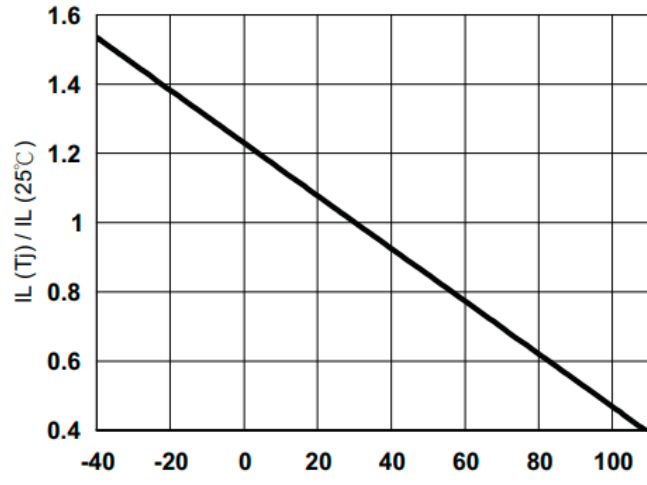
TJ, JUNCTION TEMPERATURE(°C)  
Figure 2. Typical IGT versus TJ



TJ, JUNCTION TEMPERATURE(°C)  
Figure 3. Typical VGT versus TJ



TJ, JUNCTION TEMPERATURE(°C)  
Figure 4. Typical IH versus TJ



TJ, JUNCTION TEMPERATURE(°C)  
Figure 5. Typical IL versus TJ

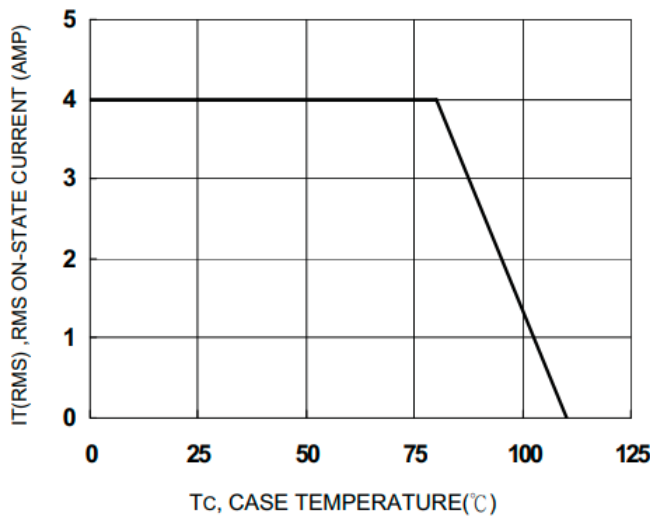


Figure 6. On-State Current Derating Curve

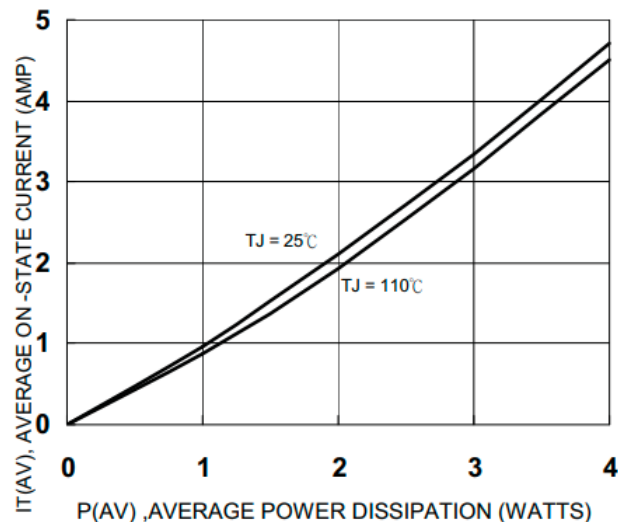
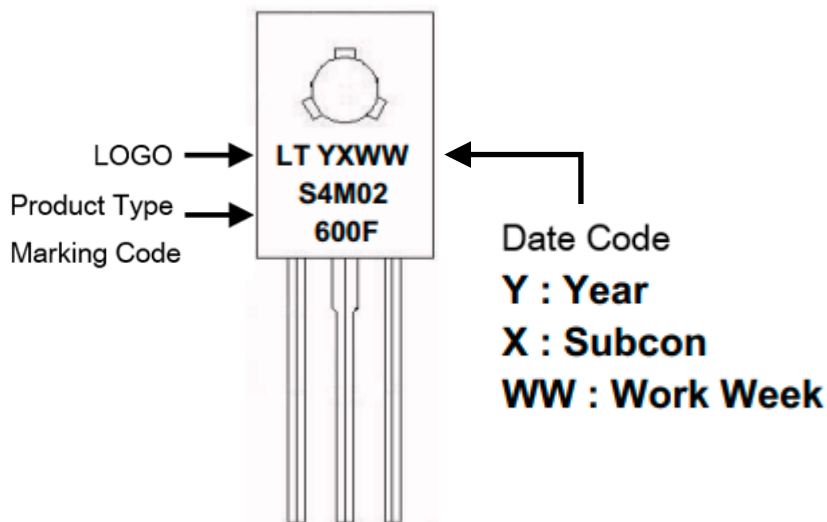


Figure 7. Power Dissipation versus IT

**Ordering Information :**

Part Number	Package	Packing	
		Qty.	Carrier
S4M02600F-BU	TO-126	200	Bulk

**Marking Information :**



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