



## FS0203

SCR

### SURFACE MOUNT SCR

#### DESCRIPTION

The UTC **FS0203** is a surface mount SCR, it uses UTC's advanced technology to provide customers with high gate sensitivity, etc.

#### FEATURES

\* High gate sensitivity

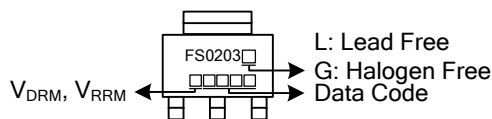


#### ORDERING INFORMATION

Ordering Number		Package	Pin assignment			Packing
Lead Free Plating	Halogen Free		1	2	3	
FS0203L-x-AA3-R	FS0203G-x-AA3-R	SOT-223	K	A	G	Tape Reel

<p>FS0203L-x-AA3-R</p> <ul style="list-style-type: none"> <li>(1) Packing Type</li> <li>(2) Package Type</li> <li>(3) <math>V_{DRM}</math>, <math>V_{RRM}</math></li> <li>(4) Lead Free</li> </ul>	<ul style="list-style-type: none"> <li>(1) R: Tape Reel</li> <li>(2) AA3 : SOT-223</li> <li>(3) 2: 200V, 4: 400V, 6: 600V, 8: 800V, 9:900V</li> <li>(4) L: Lead Free, G: Halogen Free</li> </ul>
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#### MARKING



## ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Repetitive Peak Off State Voltage ( $R_{GK}=1k\Omega$ )	$V_{DRM}, V_{RRM}$	200	V
		400	V
		600	V
		800	V
		900	V
Average On-State Current (Note 1)	$I_{T(AV)}$	1.25	A
On-State Current (Note 1)	$I_{T(RMS)}$	0.8	A
Non-Repetitive On-State Current	$I_{TSM}$	25	A
		22.5	A
$I^2t$ Value for Fusing	$I^2t$	2.5	$A^2s$
Peak Reverse Gate Voltage	$V_{GRM}$	8	V
Peak Gate Current	$I_{GM}$	1.2	A
Peak Gate Power	$P_{GM}$	3	W
Average Gate Power Dissipation	$P_{G(AV)}$	0.2	W
Operating Junction Temperature	$T_J$	-40~+125	$^{\circ}C$
Storage Junction Temperature	$T_{STG}$	-40~+150	$^{\circ}C$
Soldering Temperature	$T_{SLD}$	260	$^{\circ}C$

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. With  $5cm^2$  copper ( $e=35\mu m$ ) surface under tab.

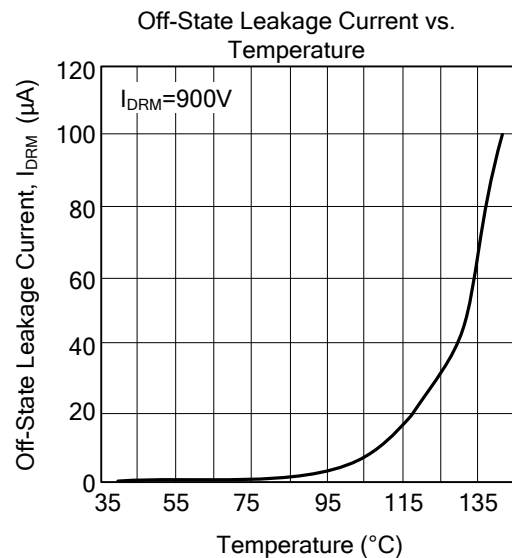
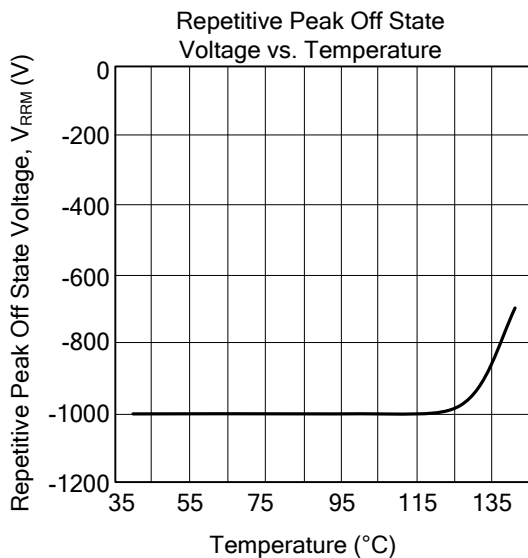
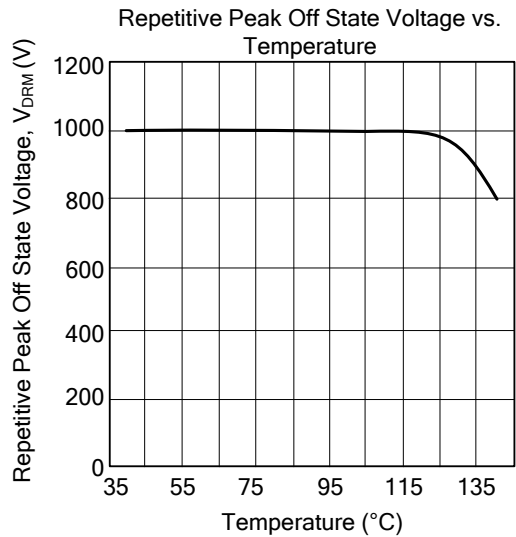
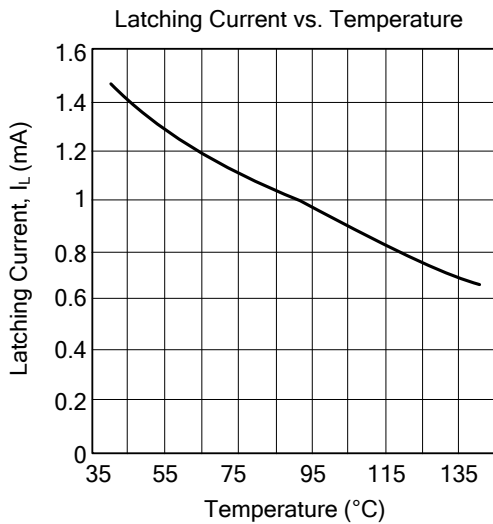
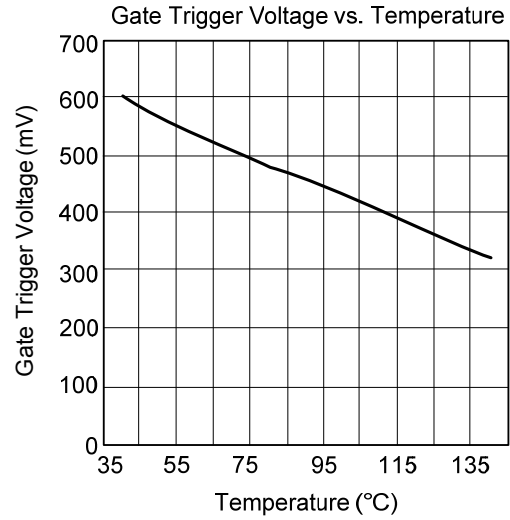
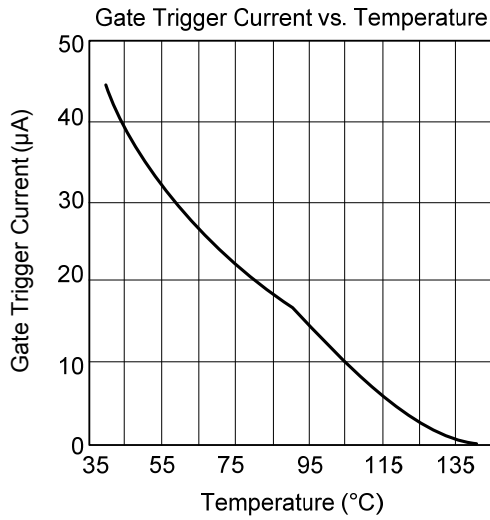
## ■ THERMAL RESISTANCES

PARAMETER	SYMBOL	RATINGS	UNIT
Junction-Leads for DC	$\theta_{JL}$	25	$^{\circ}C/W$
Junction to Ambient	$\theta_{JA}$	60	$^{\circ}C/W$

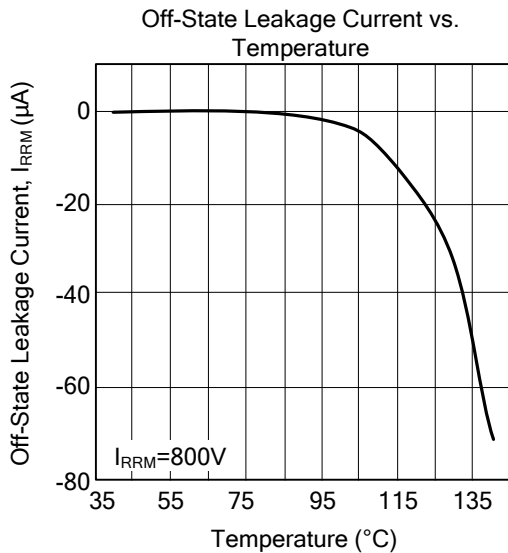
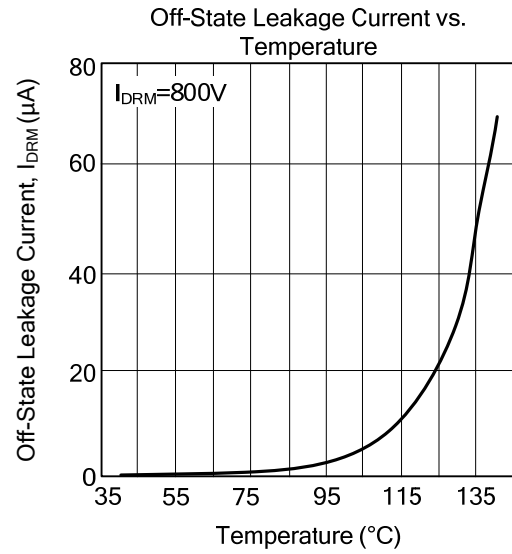
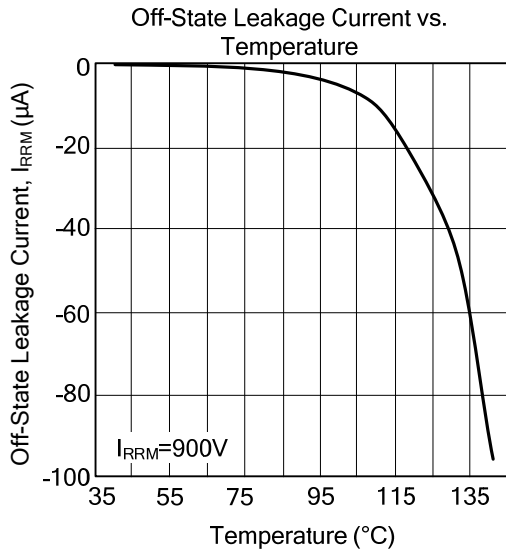
## ■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Off-State Leakage Current	$I_{DRM}/I_{RRM}$	$V_D=V_{DRM}, R_{GK}=1K\Omega, T_J=125^{\circ}C$			500	$\mu A$
		$V_R=V_{RRM}, T_J=25^{\circ}C$			5	$\mu A$
On-State Voltage	$V_{TM}$	at $I_T=1.6A, t_p=380\mu s, T_J=25^{\circ}C$			1.45	V
On-State Threshold Voltage	$V_{T(O)}$	$T_J=125^{\circ}C$			0.9	V
Dynamic Resistance	$R_D$	$T_J=125^{\circ}C$			150	$m\Omega$
Gate Trigger Current	$I_{GT}$	$V_D=12V_{DC}, R_L=140\Omega, T_J=25^{\circ}C$	20		200	$\mu A$
Gate Trigger Voltage	$V_{GT}$	$V_D=12V_{DC}, R_L=140\Omega, T_J=25^{\circ}C$			0.8	V
Gate Non-Trigger Voltage	$V_{GD}$	$V_D=V_{DRM}, R_L=3.3K\Omega, R_{GK}=1K\Omega, T_J=125^{\circ}C$	0.1			V
Holding Current	$I_H$	$I_T=50mA, R_{GK}=1K\Omega, T_J=25^{\circ}C$			5	mA
Latching Current	$I_L$	$I_G=1mA, R_{GK}=1K\Omega, T_J=25^{\circ}C$			6	mA
Critical Rate of Rise of Off-State Voltage	dv/dt	$V_D=67\% \times V_{DRM}, R_{GK}=1K\Omega, T_J=125^{\circ}C$	20			V/ $\mu s$
Critical Rate of Current Rise	di/dt	$I_G=2 \times I_{GT}, T_R \leq 100ns, F=60Hz, T_J=125^{\circ}C$	50			A/ $\mu s$

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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