



FS0203

SCR

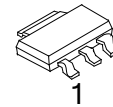
SURFACE MOUNT SCR

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



SOT-223

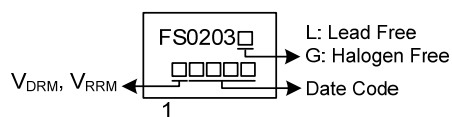
ORDERING INFORMATION

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

Note: Pin Assignment: K: Cathode A: Anode G: Gate

FS0203G-x-AA3-R	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) AA3 : SOT-223
	(3) V_{DRM} , V_{RRM}	(3) 2: 200V, 4: 400V, 6: 600V, 8: 800V, 9:900V
	(4)Green Package	(4) G: Halogen Free and Lead Free, L: Lead Free

MARKING



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Repetitive Peak Off State Voltage ($R_{GK}=1k\Omega$)	FS0203-2	V_{DRM}, V_{RRM}	200	V
	FS0203-4		400	V
	FS0203-6		600	V
	FS0203-8		800	V
	FS0203-9		900	V
Average On-State Current (Note 1)	Half Cycle, $\theta=180^\circ$ $T_{TAB}=95^\circ\text{C}$	$I_{T(AV)}$	1.25	A
On-State Current (Note 1)	Half Cycle, $\theta=180^\circ$ $T_{TAB}=95^\circ\text{C}$	$I_{T(RMS)}$	0.8	A
Non-Repetitive On-State Current	Half Cycle, 60Hz, $T_J=25^\circ\text{C}$	I_{TSM}	25	A
	Half Cycle, 50Hz, $T_J=25^\circ\text{C}$		22.5	A
I^2t Value for Fusing	$t_p=10\text{ms}$, Half Cycle	I^2t	2.5	A^2s
Peak Reverse Gate Voltage	$I_{GR}=10\mu\text{A}$, $T_J=25^\circ\text{C}$	V_{GRM}	8	V
Peak Gate Current	20 μs max.	I_{GM}	1.2	A
Peak Gate Power	20 μs max.	P_{GM}	3	W
Average Gate Power Dissipation	20ms max.	$P_{G(AV)}$	0.2	W
Operating Junction Temperature		T_J	-40~+125	$^\circ\text{C}$
Storage Junction Temperature		T_{STG}	-40~+150	$^\circ\text{C}$
Soldering Temperature	10s max.	T_{SLD}	260	$^\circ\text{C}$

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 5cm² copper ($e=35\mu\text{m}$) surface under tab.

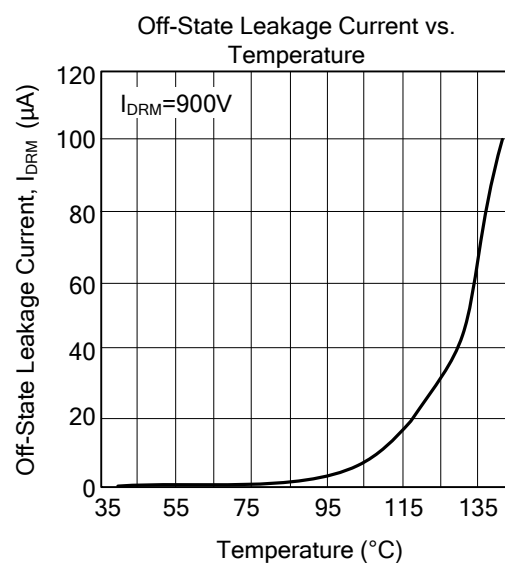
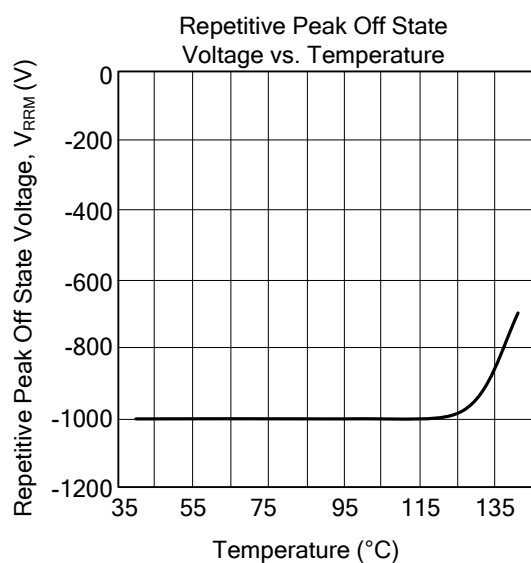
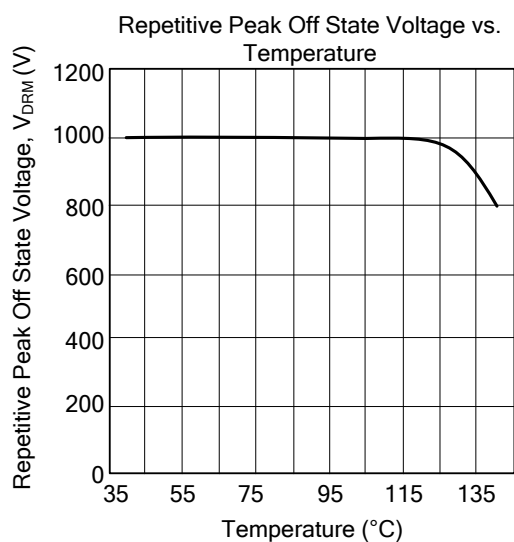
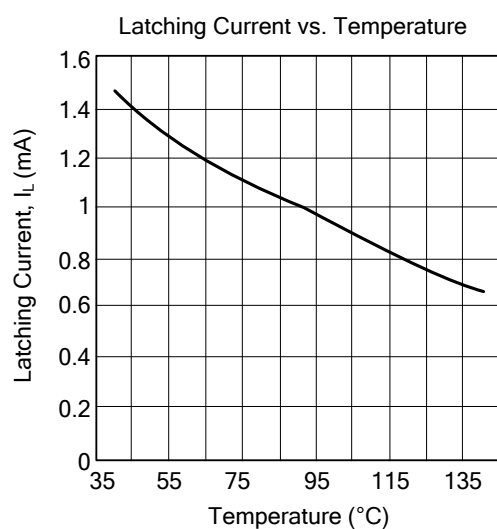
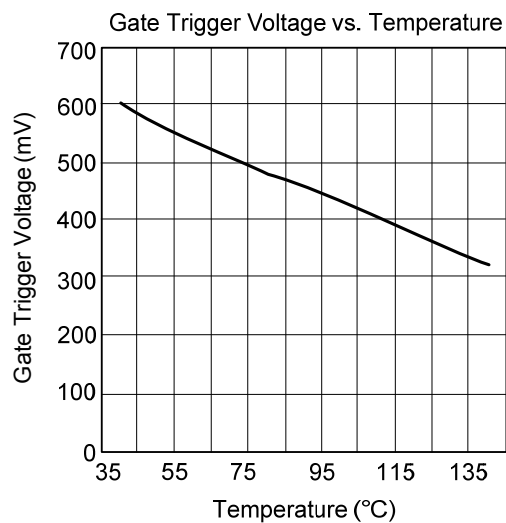
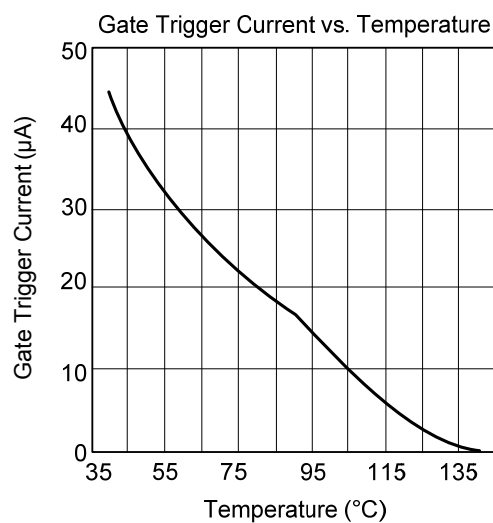
■ THERMAL RESISTANCES

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

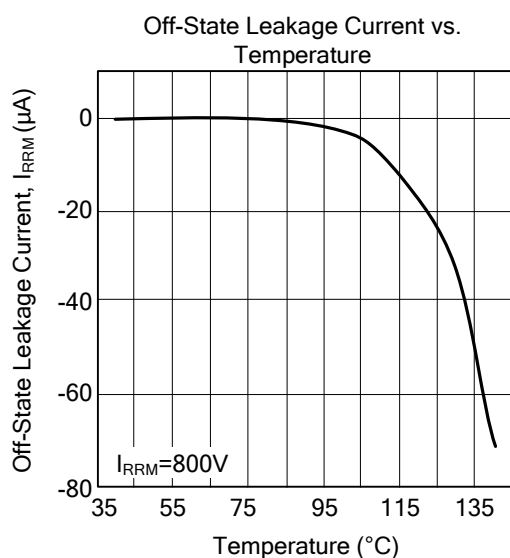
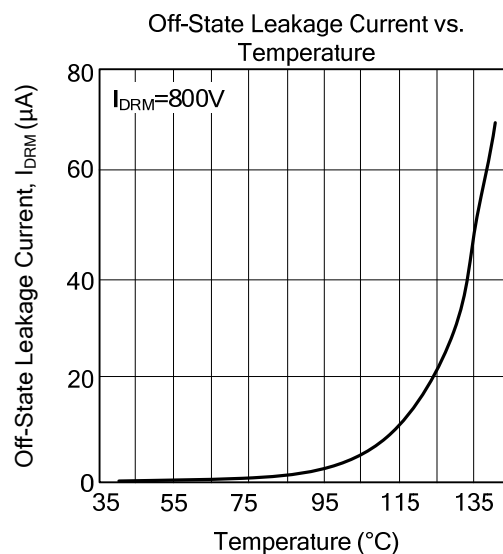
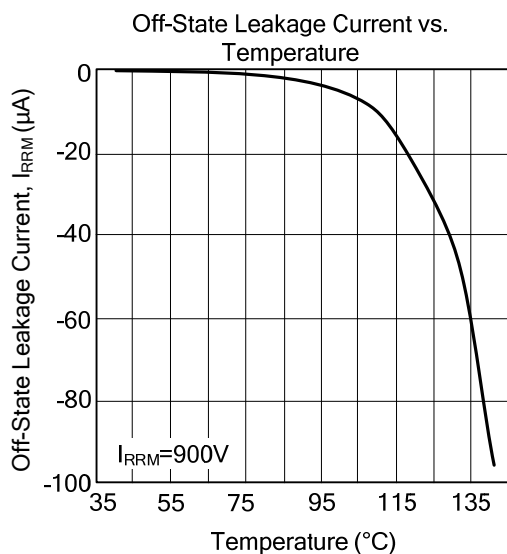
■ ELECTRICAL CHARACTERISTICS

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

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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