



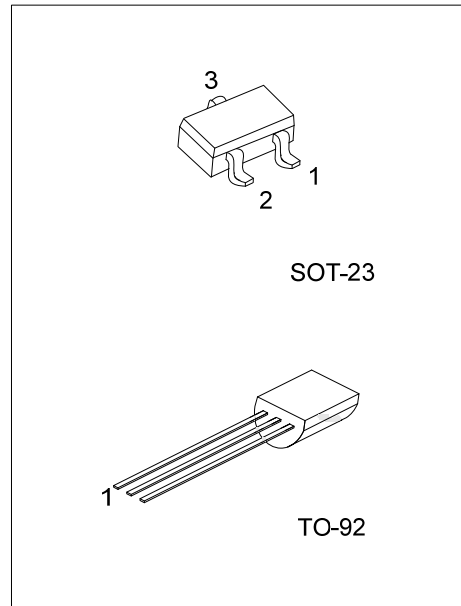
# XL/ML1225

**SCR**

## MEDIUM POWER LOW VOLTAGE TRANSISTOR

### DESCRIPTION

The **XL1225/ML1225** silicon controlled rectifiers are high performance planar diffused PNP devices. These parts are intended for low cost high volume applications.



### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
XL1225L-xx-AE3-R	XL1225G-xx-AE3-R	SOT-23	G	K	A	Tape Reel
XL1225L-xx-T92-B	XL1225G-xx-T92-B	TO-92	K	G	A	Tape Box
XL1225L-xx-T92-K	XL1225G-xx-T92-K	TO-92	K	G	A	Bulk
ML1225L-xx-AE3-R	ML1225G-xx-AE3-R	SOT-23	G	K	A	Tape Reel
ML1225L-xx-T92-B	ML1225G-xx-T92-B	TO-92	K	G	A	Tape Box
ML1225L-xx-T92-K	ML1225G-xx-T92-K	TO-92	K	G	A	Bulk

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

<p>XL1225G-xx-AE3-R</p> <p>(1)Packing Type (2)Package Type (3)Rank (4)Green Package (5) Peak Voltage</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel (2) AE3: SOT-23, T92: TO-92 (3) Refer to CLASSIFICATION OF I<sub>GT</sub> (4) G: Halogen Free and Lead Free, L: Lead Free (5) XL : 400V , ML: 300V</p>
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### MARKING

Package	MARKING	
	XL1225	ML1225
SOT-23	<p>L: Lead Free G: Halogen Free</p>	<p>L: Lead Free G: Halogen Free</p>
TO-92	<p>UTC XL1225 L: Lead Free G: Halogen Free Date Code</p>	<p>UTC ML1225 L: Lead Free G: Halogen Free Date Code</p>

■ ABSOLUTE MAXIMUM RATINGS (Ta= 25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Repetitive Peak Off-State Voltage (T <sub>J</sub> =40 ~ 125°C, R <sub>GK</sub> =1kΩ )	XL1225	400	V
	ML1225	300	
On-State Current (Tc=40°C)	I <sub>T(RMS)</sub>	0.8	A
Average On-State Current (Half Cycle=180,Tc=40°C)	I <sub>T(AV)</sub>	0.5	A
Peak Reverse Gate Voltage (IGR=10μA)	V <sub>GRM</sub>	1	V
Peak Gate Current (10μs Max.)	I <sub>GM</sub>	0.1	A
Gate Dissipation (20ms Max.)	P <sub>G(AV)</sub>	150	mW
Junction Temperature	T <sub>J</sub>	+125	°C
Storage Temperature	T <sub>STG</sub>	-40 ~ +150	°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. The device is guaranteed to meet performance specification within 0°C~70°C operating temperature range and assured by design from -20°C ~85°C.

■ ELECTRICAL CHARACTERISTICS (Ta= 25°C, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Off State Leakage Current	I <sub>DRM</sub>	V <sub>DRM</sub> (R <sub>GK</sub> =1KΩ), T <sub>J</sub> =125°C			0.1	mA
Off State Leakage Current	I <sub>DRM</sub>	V <sub>DRM</sub> (R <sub>GK</sub> =1KΩ), T <sub>J</sub> =25°C			1.0	μA
On State Voltage	V <sub>T</sub>	AT I <sub>T</sub> =0.4A			1.4	V
		AT I <sub>T</sub> =0.8A			2.2	
On State Threshold Voltage	V <sub>T(TO)</sub>	T <sub>J</sub> =125°C			0.95	V
On State Slops Resistance	R <sub>t</sub>	T <sub>J</sub> =125°C			600	m
Gate Trigger Current	I <sub>GT</sub>	V <sub>D</sub> =7V			200	μA
Gate Trigger Voltage	V <sub>GT</sub>	V <sub>D</sub> =7V			0.8	V
Holding Current	I <sub>H</sub>	R <sub>GK</sub> =1KΩ			5	mA
Latching Current	I <sub>L</sub>	R <sub>GK</sub> =1KΩ			6	mA
Critical Rate of Voltage Rise	DV/DT	V <sub>D</sub> =0.67×V <sub>DRM</sub> (R <sub>GK</sub> =1KΩ),T <sub>J</sub> =125°C				V/μs
Critical Rate of Current Rise	DV/DT	I <sub>G</sub> =10mA, dI <sub>G</sub> /dt=0.1A/μs,T <sub>J</sub> =125°C				A/μs
Gate Controlled Delay Time	T <sub>GD</sub>	I <sub>G</sub> =10mA, dI <sub>G</sub> /dt=0.1A/μs			2.2	μs
Commutated Turn-off Time	TG	T <sub>J</sub> =85°C, V <sub>D</sub> =0.67*V <sub>DRM</sub> , V <sub>R</sub> =35V, I <sub>T</sub> =I <sub>T(AV)</sub>			200	μs

■ CLASSIFICATION OF I<sub>GT</sub>

RANK	B	C	AA	AB	AC	AD
RANGE	50-100	100-200	8-15	15-20	20-25	25-50

■ TYPICAL CHARACTERISTICS

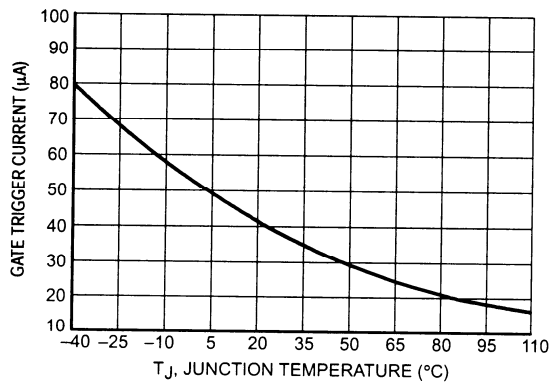


Figure 1. Typical Gate Trigger Current versus Junction Temperature

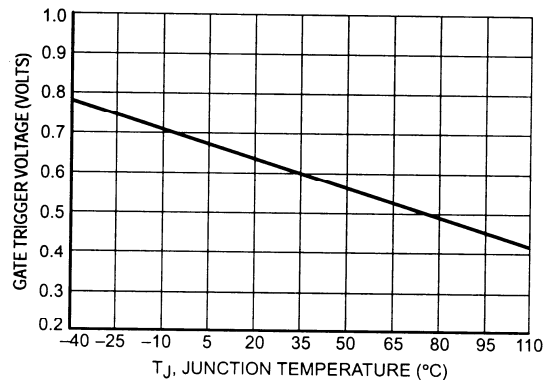


Figure 2. Typical Gate Trigger Voltage versus Junction Temperature

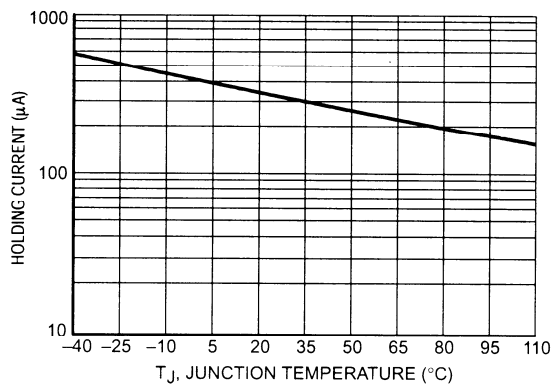


Figure 3. Typical Holding Current versus Junction Temperature

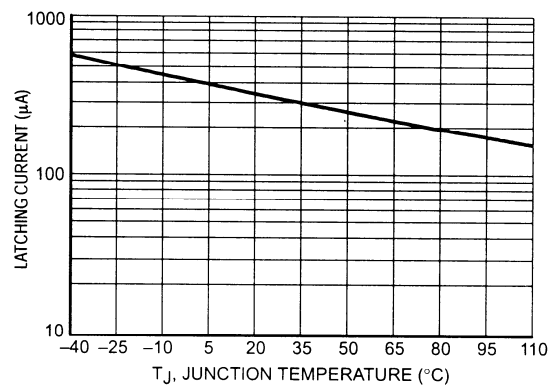


Figure 4. Typical Latching Current versus Junction Temperature

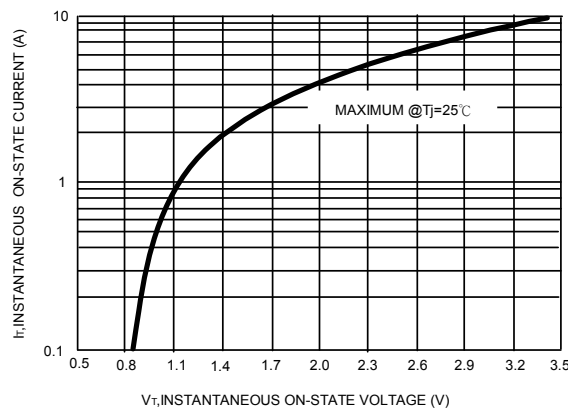


Figure 5. Typical On-State Characteristics

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