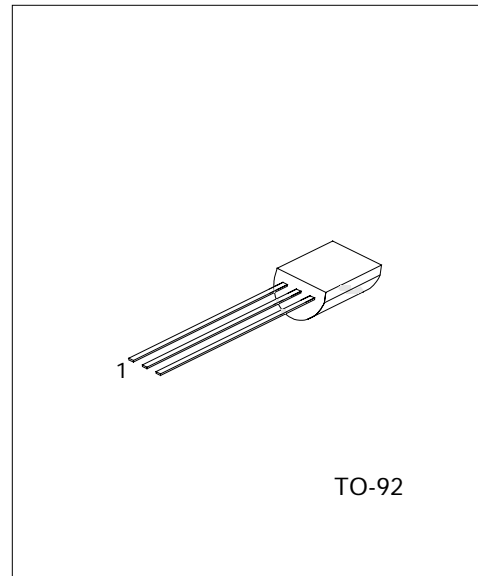


**XL/ML1225****SCR****MEDIUM POWER LOW  
VOLTAGE TRANSISTOR****■ DESCRIPTION**

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



\*Pb-free plating product number:  
XL1225L/ML1225L

**■ PIN CONFIGURATION**

PIN NO.	PIN NAME
1	CATHODE
2	GATE
3	ANODE

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**■ ORDERING INFORMATION**

Order Number		Package	Packing
Normal	Lead free		
XL1225-T92-B	XL1225L-T92-B	TO-92	Tape Box
XL1225-T92-K	XL1225L-T92-K	TO-92	Bulk
ML1225-T92-B	ML1225L-T92-B	TO-92	Tape Box
ML1225-T92-K	ML1225L-T92-K	TO-92	Bulk

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

PARAMETER	SYMBOL	TEST CONDITION	RATINGS	UNIT
Repetitive Peak Off-State Voltage	<b>XL1225</b> <b>ML1225</b>	$V_{DRM}$ $T_J = 40 \sim 125^\circ\text{C}$ $R_{GK} = 1\text{k}\Omega$	400	V
			300	
On-State Current	$I_{T(RMS)}$	$T_C = 40^\circ\text{C}$	0.8	A
Average On-State Current	$I_{T(AV)}$	Half Cycle=180, $T_C = 40^\circ\text{C}$	0.5	A
Peak Reverse Gate Voltage	$V_{GRM}$	$I_{GR} = 10\mu\text{A}$	1	V
Peak Gate Current	$I_{GM}$	10us Max.	0.1	A
Gate Dissipation	$P_{G(AV)}$	20ms Max.	150	mW
Operating Temperature	$T_J$		+125	$^\circ\text{C}$
Storage Temperature	$T_{STG}$		-40 ~ +150	$^\circ\text{C}$

Note 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 ~70 operating temperature range and assured by design from -20 ~85 .

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Off State Leakage Current	$I_{DRM}$	@ $V_{DRM}(R_{GK}=1\text{k}\Omega)$ , $T_J = 125^\circ\text{C}$			0.1	mA
Off State Leakage Current	$I_{DRM}$	@ $V_{DRM}(R_{GK}=1\text{k}\Omega)$ , $T_J = 25^\circ\text{C}$			1.0	$\mu\text{A}$
On State Voltage	$V_T$	AT $I_T = 0.4\text{A}$ AT $I_T = 0.8\text{A}$			1.4 2.2	V
On State Threshold Voltage	$V_{T(TO)}$	$T_J = 125^\circ\text{C}$			0.95	V
On State Slops Resistance	$R_t$	$T_J = 125^\circ\text{C}$			600	m
Gate Trigger Current	$I_{GT}$	$V_D = 7\text{V}$			200	$\mu\text{A}$
Gate Trigger Voltage	$V_{GT}$	$V_D = 7\text{V}$			0.8	V
Holding Current	$I_H$	$R_{GK} = 1\text{k}\Omega$			5	mA
Latching Current	$I_L$	$R_{GK} = 1\text{k}\Omega$			6	mA
Critical Rate of Voltage Rise	$DV/DT$	$V_D = 0.67 \cdot V_{DRM}(R_{GK}=1\text{k}\Omega)$ , $T_J = 125$				V/ $\mu\text{s}$
Critical Rate of Current Rise	$DV/DT$	$I_G = 10\text{mA}$ , $dI_G/dt = 0.1\text{A}/\mu\text{s}$ , $T_J = 125$				A/ $\mu\text{s}$
Gate Controlled Delay Time	$T_{GD}$	$I_G = 10\text{mA}$ , $dI_G/dt = 0.1\text{A}/\mu\text{s}$			2.2	$\mu\text{s}$
Commutated Turn-off Time	$T_G$	$T_J = 85^\circ\text{C}$ , $V_D = 0.67 \cdot V_{DRM}$ $V_R = 35\text{V}$ , $I_T = I_{T(AV)}$			200	$\mu\text{s}$

■ CLASSIFICATION OF  $I_{GT}$

RANK	B	C	AA	AB	AC	AD
RANGE	50-100 $\mu\text{A}$	100-200 $\mu\text{A}$	8-15 $\mu\text{A}$	15-20 $\mu\text{A}$	20-25 $\mu\text{A}$	25-50 $\mu\text{A}$

## TYPICAL CHARACTERISTICS

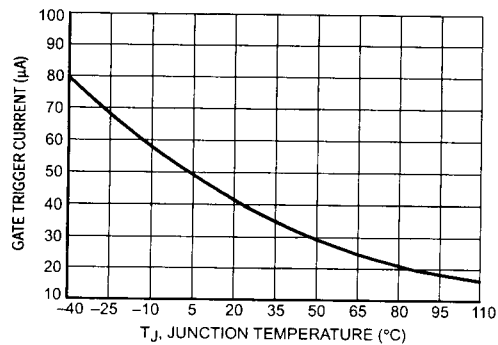


Figure 1. Typical Gate Trigger Current versus Junction Temperature

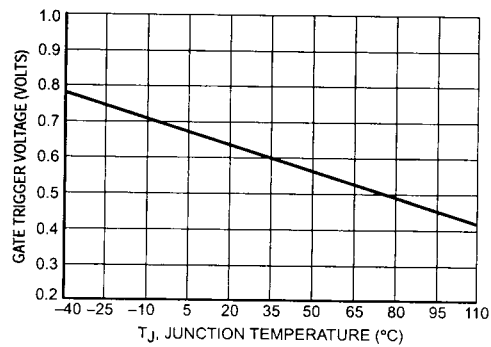


Figure 2. Typical Gate Trigger Voltage versus Junction Temperature

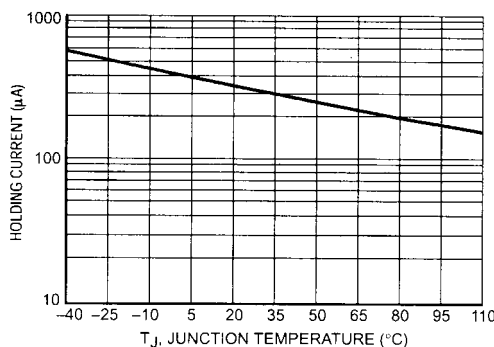


Figure 3. Typical Holding Current versus Junction Temperature

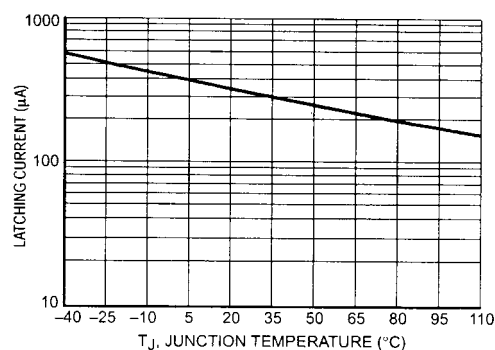


Figure 4. Typical Latching Current versus Junction Temperature

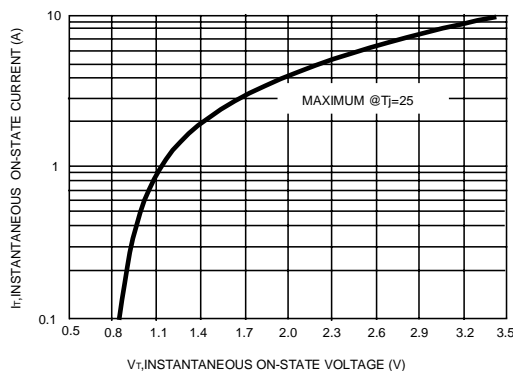


Figure 5. Typical On-State Characteristics

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