


UNISONIC TECHNOLOGIES CO.,LTD.

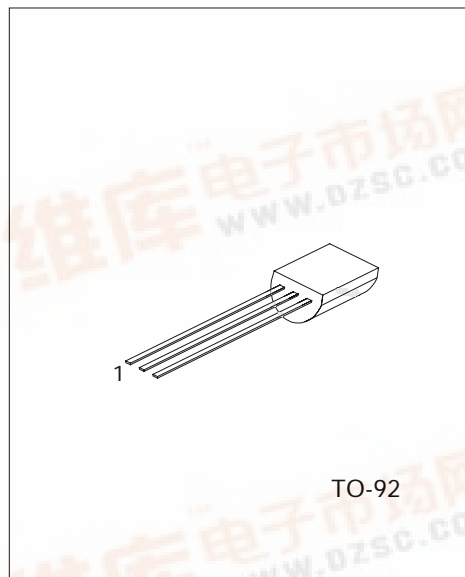
XL/ML1225

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.



TO-92

*Pb-free plating product number:
XL1225L/ML1225L

■ PIN CONFIGURATION

PIN NO.	PIN NAME
1	CATHODE
2	GATE
3	ANODE

■ 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	XL1225 ML1225	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	μA
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	μA
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	$V_D = 0.67 * V_{DRM}(R_{GK}=1\text{K}\Omega)$, $T_J = 125$				V/ μs
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/ μs
Gate Controlled Delay Time	T_{GD}	$I_G = 10\text{mA}$, $dI_G/dt = 0.1\text{A}/\mu\text{s}$			2.2	μs
Commutated Turn-off Time	TG	$T_J = 85^{\circ}\text{C}$, $V_D = 0.67 * V_{DRM}$ $V_R = 35\text{V}$, $I_T = I_{T(AV)}$			200	μs

■ CLASSIFICATION OF I_{GT}

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

TYPICAL CHARACTERISTICS

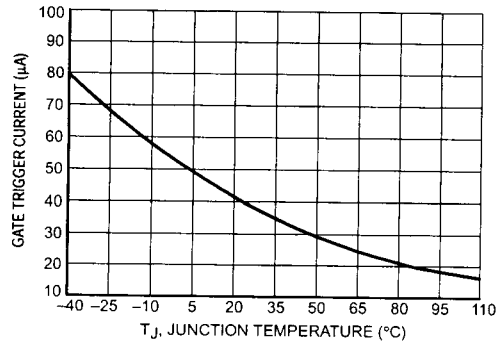


Figure 1. Typical Gate Trigger Current versus Junction Temperature

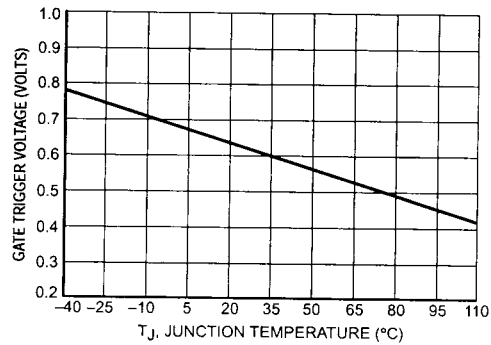


Figure 2. Typical Gate Trigger Voltage versus Junction Temperature

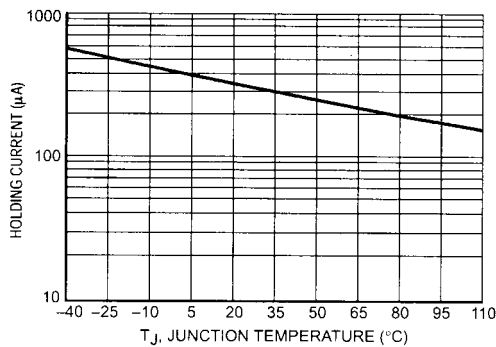


Figure 3. Typical Holding Current versus Junction Temperature

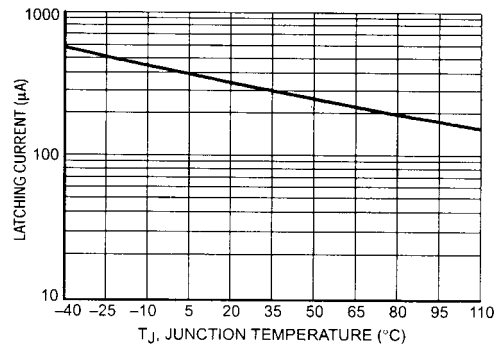


Figure 4. Typical Latching Current versus Junction Temperature

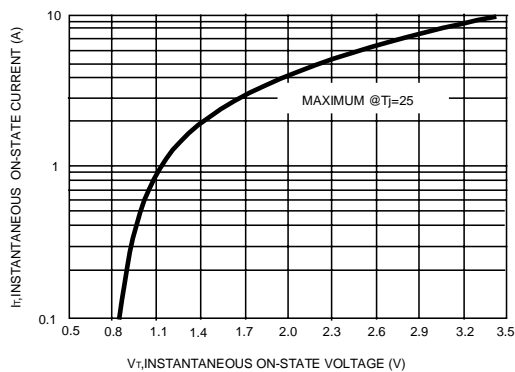


Figure 5. Typical On-State Characteristics

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