

Features

- Peak breakdown voltage:
250V: BLM303X; 400V: BLM304X;
600V: BLM306X; 800V: BLM308X
- High isolation voltage between input and output (Viso =3750V rms)
- Operating Temperature: -55°C~110°C

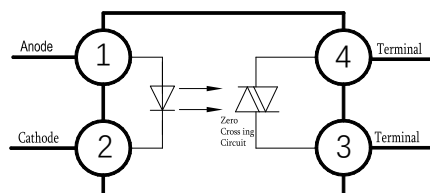
HF

Applications

- Electromagnetic valve controls
- Light controls
- Static power switch
- AC Motor Drive
- Electromagnetic contact switch
- Solid state relay

Mechanical Data

- Case: SOP4
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



Ordering Information

BL M30VX (M) (G) - (U) (N) (Y)

① ② ③ ④ ⑤ ⑥ ⑦

- ① Brand(BL)
- ② Product series(V:3,4,6,8;X:0,1,2,3)
- ③ Package type(None:SOP4)
- ④ Halogen option(None :Halogen free)
- ⑤ Lead frame (None: Copper)
- ⑥ Customer option 1 (0-9 or A-Z or none)
- ⑦ Customer option 2 (0-9 or A-Z or none)

Part Number	Package	Shipping Quantity	Marking Code
BLM30V*1X*2	SOP4	3000 pcs / Tape & Reel	BLM30V*1X*2

Notes:

- 1. V denotes V_{DRM} digits: 3, 4, 6, 8
- 2. X denotes I_{FT} digits: 0, 1, 2, 3

Marking Information

- "BL" denotes brand
- "V" denotes V_{DRM} digits: 3, 4, 6, 8
- "X" denotes I_{FT} digits: 0, 1, 2, 3
- "Y" denotes Year : A(2024), B(2025), C(2026)
- "WW" denotes Week's number
- "N" denotes the day of Week



Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter			Symbol	Value	Unit
Input	Forward Current		I _F	60	mA
	Reverse Voltage		V _R	6	V
	Power Dissipation		P _D	100	mW
	Derating factor (above Ta = 85 °C)			3.8	mW/°C
Output	Power Dissipation		P _C	300	mW
	Derating factor (above Ta = 85 °C)			7.6	mW/°C
	Off-state Output Terminal Voltage	BLM303X	V _{DRM}	250	V
		BLM304X		400	
		BLM306X		600	
		BLM308X		800	
	Peak repetitive surge current (pw=100μs,120pps)		I _{TSM}	1	A
	Turn-on current (root mean square value)		I _{T(RMS)}	100	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Total Power Dissipation	P _{TOT}	330	mW
Isolation Voltage *1	V _{ISO}	3750	Vrms
Operating Temperature	T _{OPR}	-55 ~ +110	°C
Storage Temperature Range	T _{STG}	-55 ~ +125	°C
Soldering Temperature *2	T _{SOL}	260	°C

Notes:

- 40 to 60% RH, AC for 1 minute. At this time, pins 1, 2 & 3 are shorted, and pins 4, 5 & 6 are shorted together.
- For 10 seconds

Zero Cross Triac Driver Photocouple

BLM303X ,BLM304X,BLM306X,BLM308X

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter			Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage		V _F	I _F =20mA	-	1.23	1.5	V
	Reverse Leakage current		I _R	V _R =6V	-	-	10	μA
Output	Peak Blocking Current	BLM303X	I _{DRM}	V _{DRM} =Rated V _{DRM} , I _F = 0mA	-	-	100	nA
		BLM304X			-	-	500	
		BLM306X			-	-	500	
		BLM308X			-	-	500	
	Peak on-state voltage		V _{TM}	I _{TM} =100mA, I _F =Rated I _{FT}	-	-	3	V
	Critical Rate of Rise off-state Voltag	BLM303X	dv/dt	V _{PEAK} =Rated V _{DRM} , I _F = 0mA	1000	-	-	V/μs
		BLM304X			1000	-	-	
		BLM306X			600	-	-	
		BLM308X			600	-	-	
	Inhibition voltage (MT1-MT2 voltage above which device will not trigger)		V _{Inh}	I _F = Rated I _{FT}	-	-	20	V
	Leakage in Inhibited State		I _{DRM2}	I _F = Rated I _{FT} V _{DRM} =Rated V _{DRM} off state	-	-	500	μA
Transfer Characteristics	LED trigger current	BLM3031	I _{FT}	Main terminal voltage = 3V	-	-	15	mA
		BLM3041			-	-	15	
		BLM3061			-	-	15	
		BLM3081			-	-	15	
		BLM3032			-	-	10	
		BLM3042			-	-	10	
		BLM3062			-	-	10	
		BLM3082			-	-	10	
		BLM3033			-	-	5	
		BLM3043			-	-	5	
		BLM3063			-	-	5	
		BLM3083			-	-	5	
	Holding Current		I _H		-	250		μA

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Fig.1 LED Positive voltage vs Positive current

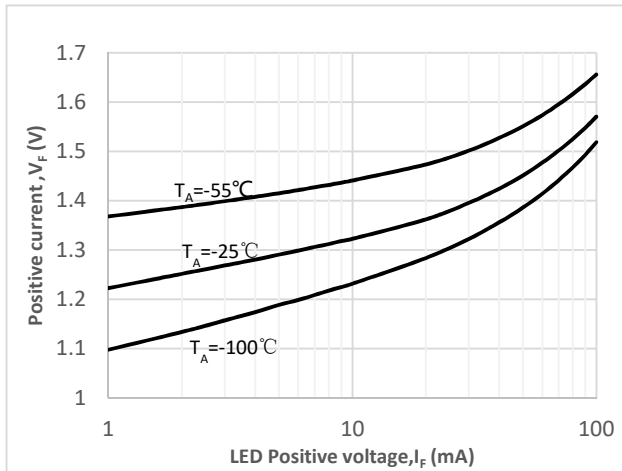


Fig.2 On-state characteristic

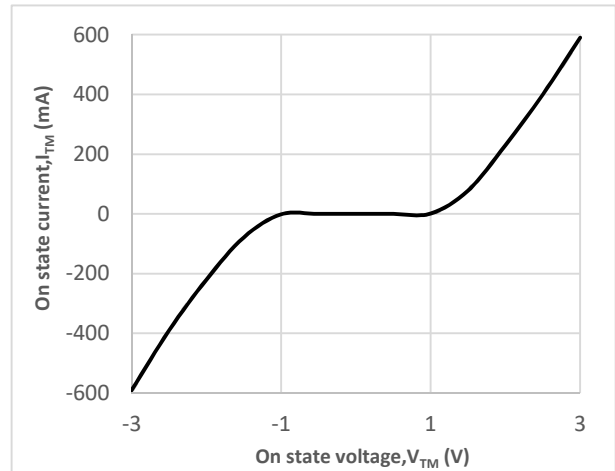


Fig.3 Trigger current vs Ambient temperature

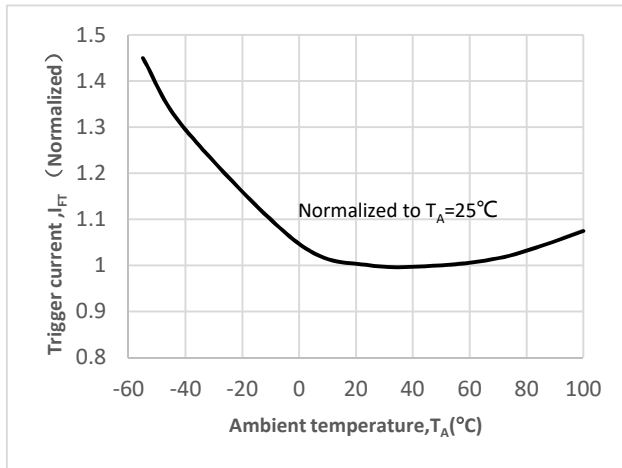


Fig.4 LED Trigger current vs LED Pulse Width

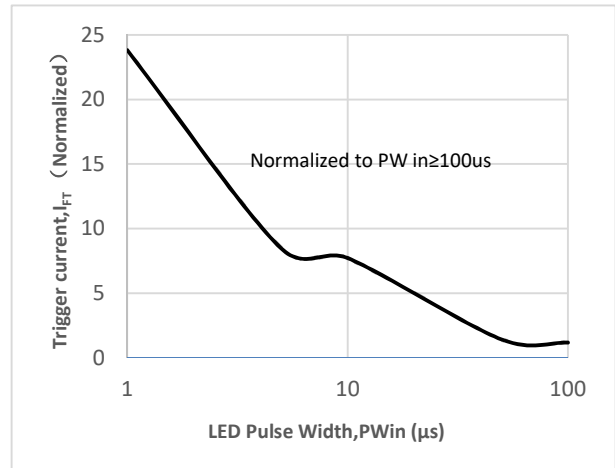


Fig.5 Holding current vs Temperature

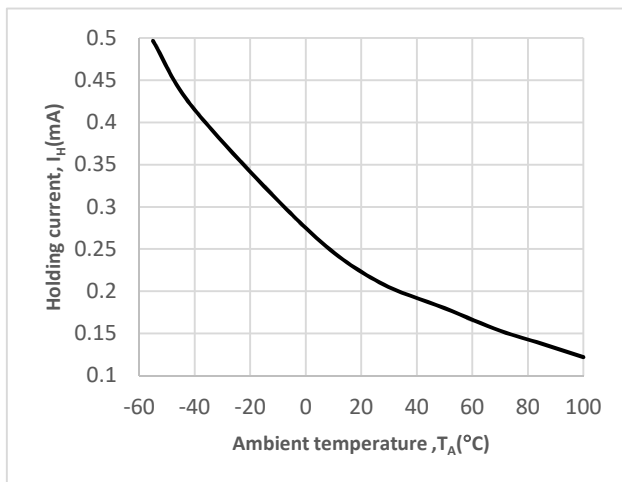


Fig.6 Leakage current vs Temperature

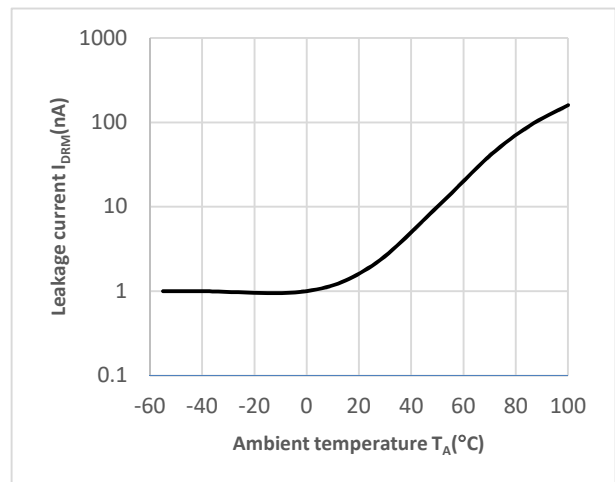


Fig.7 Inhibit state leakage current vs Ambient temperature

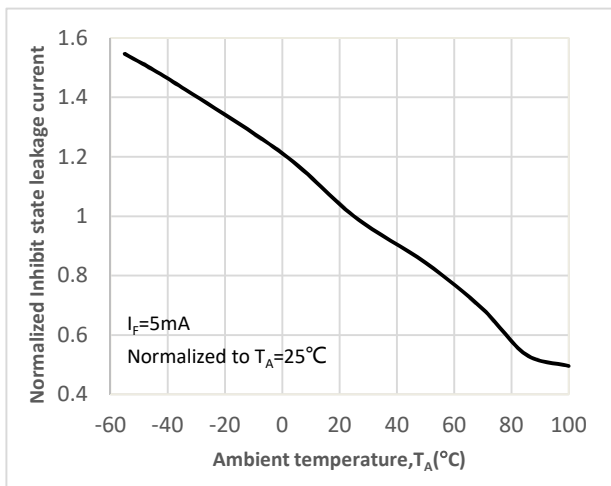


Fig.8 Inhibition voltage vs Ambient temperature

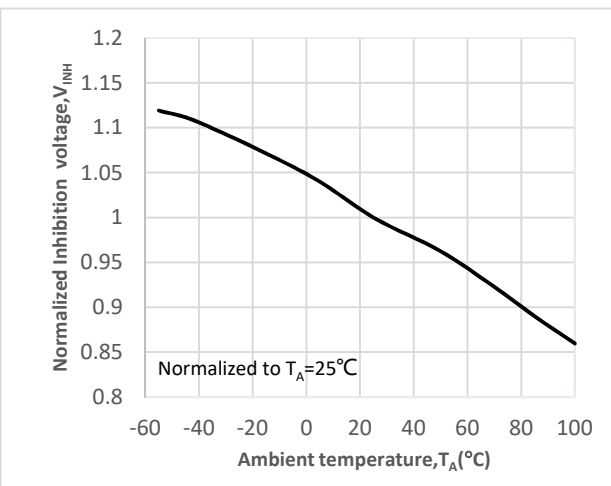
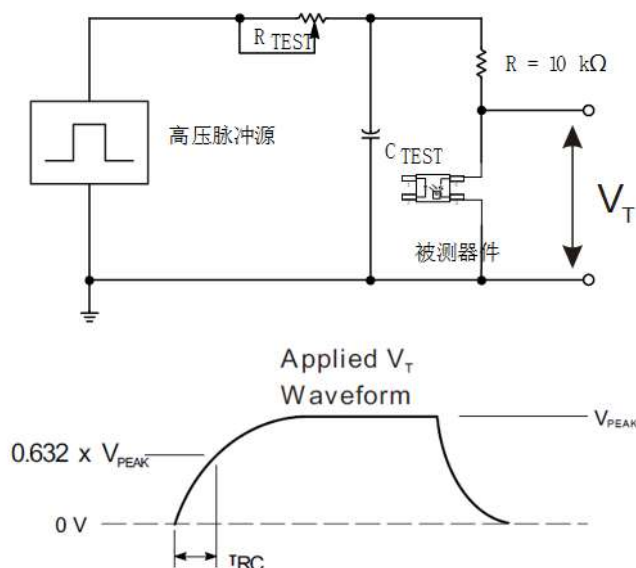


Fig.9 Static dv / dt test circuit and waveform



The high voltage pulse applied to the output of the device under test through the RC circuit is set to the required V_{PEAK} value. LED current is not applied. The waveform V_T is monitored with X100 probe. By adjusting the R_{TEST} value, the dv/dt (slope) increases until the device under test is observed to be triggered (waveform collapse). Then dv/dt drops until the device under test stops being triggered. At this point, τ_{RC} is recorded and the dv/dt calculated.

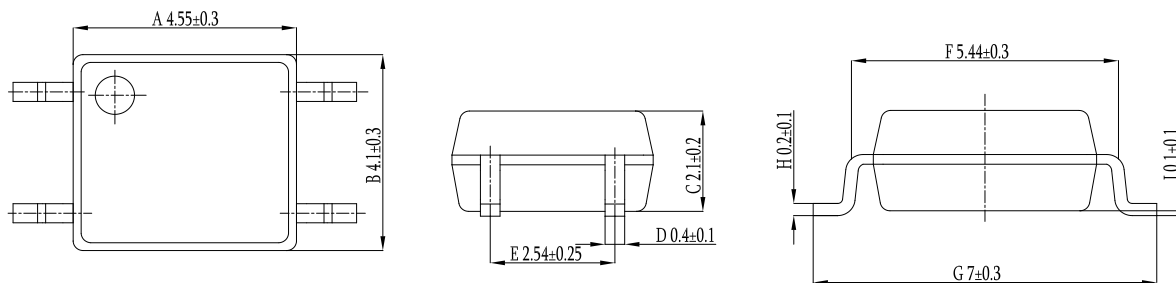
$$dv/dt = \frac{0.632 \times V_{PEAK}}{\tau_{RC}}$$

For example, $V_{PEAK} = 400V$ for QX302X series. The dv/dt value is calculated as follows:

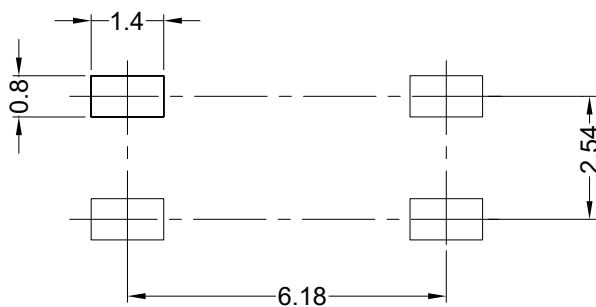
$$dv/dt = \frac{0.632 \times 400}{\tau_{RC}} = \frac{252}{\tau_{RC}}$$

Package Outline Dimensions (unit: mm)

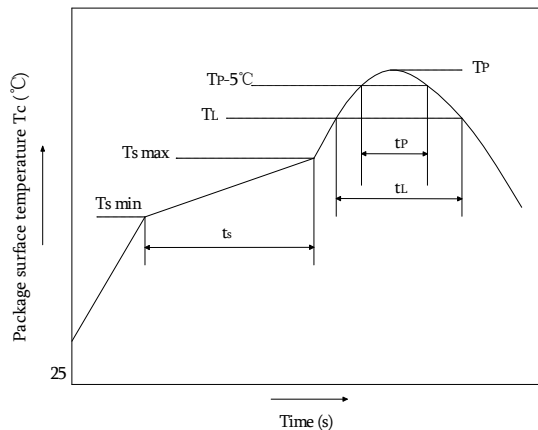
SOP4



SOLDERING FOOTPRINT (unit: mm)



Reflow soldering

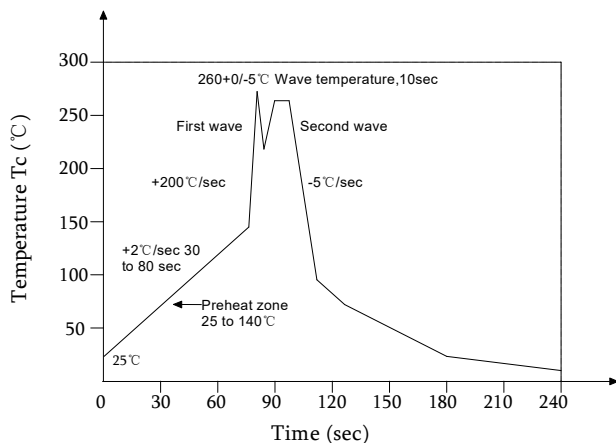


	Symbol	Min	Max	Unit
Preheat temperature	Ts	150	200	°C
Preheat time	ts	60	120	s
Ramp-up rate(T _L to T _P)			3	°C/s
Liquidus temperature	T _L	217		°C
Time above T _L	t _L	60	150	s
Peak temperature	T _P		260	°C
Time during which T _c is between (T _P -5) and T _P	t _p		30	s
Ramp-down rate(T _P to T _L)			6	°C/s

Note:

Reflow soldering is recommended at the temperatures and times shown, no more than three times.

Wave soldering



Profile feature	
Average ramp-up rate	~200°C/s
Heating rate during preheat	1°C/s to 2°C/s typical; 4°C/s maximum
Final preheat temperature Ts	~130°C
Preheat time (25°C to Ts)	>60s
Peak temperature T _P	260°C
Time within peak temperature t _p	10s
Ramp-down rate	5°C/s maximum

Soldering with hand soldering iron

- Hand soldering iron is only used for product rework or sample testing.
- Hand soldering iron requirements: Temperature: 360 °C ± 5°C within 3s.

Packing

Package Type	Packing Form	Quantity per Tube & Reel	Quantity per Box	Quantity per Carton	Antistatic Bag Specification	Box Specification	Carton Specification	Note
SOP4	Reel($\phi 330$ mm)	3000 pcs/reel	2 reels /box	5 boxes /ctn	380*420mm	350*340*60mm	365*330*370mm	Guard band 200mm /min.

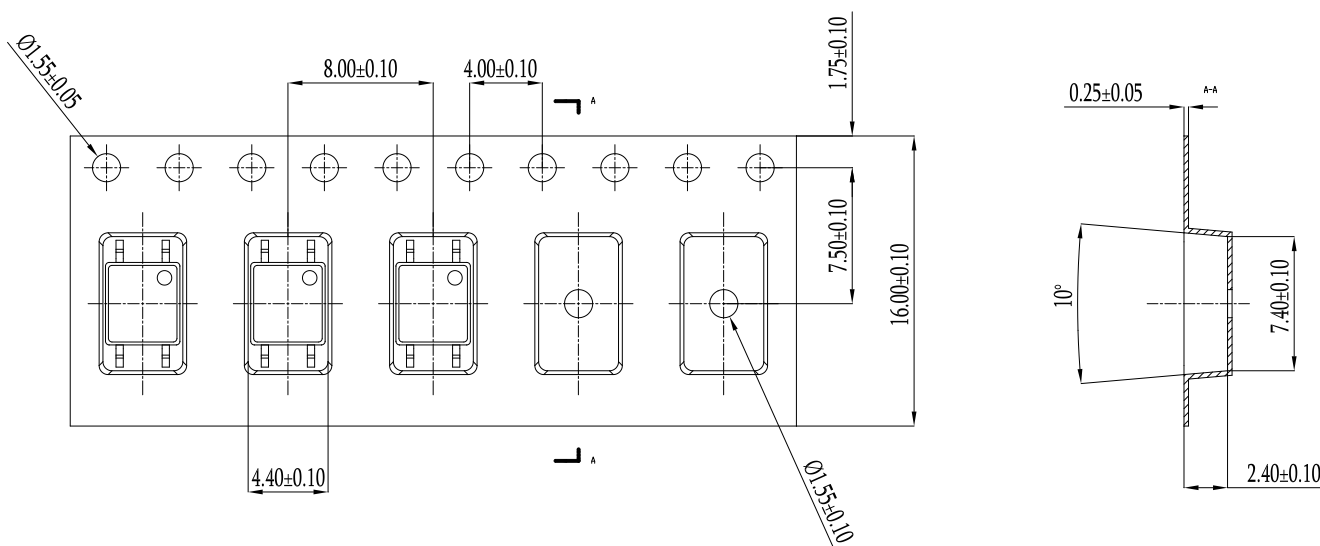
■ Summary table

■ SOP4 (Reel)

Qty/reel: 3000 pcs. Qty/box: 6000 pcs.

Qty/ctn : 30000 pcs.

Schematic: (unit:mm)



IMPORTANT NOTICE

Galaxy Microelectronics (GME) reserves the right to make changes without further notice to any product herein to make corrections, modifications, improvements, or other changes. GME does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others.