



# HOME APPLICATION RELAY

## ETR GQ SERIES

### ■ FEATURES

- Miniature size with low power consumption for rated loading up to 20A.
- Surge Strength up to 10,000V.
- Operating temperature up to 105°C.
- UL Class F insulation available.
- Comply with RoHS and REACH regulations.
- 3-in-1 combo available with THR reflow solderable + Halogen Free + IEC 60335-1 GWT Compliance.
- Explosion proof version with IEC 60079-15 (IECEx) , File Number E516641

### ■ SAFETY STANDARD

#### UL&CUL E141060 UL 508

Model	Contact	Load	Cycles
GQ-**-1**LM1	M(NO)	10A, 250Vac, 85°C, General Use 12A, 125Vac, 85°C, General Use 10A, 30Vdc, 85°C, L/R=0 TV-5, 120Vac, 40°C	100K 100K 100K 25K
GQ-**-1**LM1F	M(NO)	10A, 250Vac, 105°C, General Use 12A, 125Vac, 105°C, General Use 10A, 30Vdc, 105°C, L/R=0	100K 100K 90K
GQ-**-1**DM2F	M(NO)	16A, 277Vac, 105°C, General Use 16A, 24Vdc, 105°C, L/R=0 TV-8, 120Vac, 40°C 1/2 HP, 125Vac, 105°C 1 HP, 277Vac, 105°C	90K 50K 25K 20K 20K
GQ-**-1**DM2F-2	M(NO)	20A, 250Vac, 85°C, General Use 20A, 24Vdc, 85°C, L/R=0	10K 10K

#### VDE 40025456 IEC 61810-1

Model	Contact	load	Cycles
GQ-**-1**LM1	M(NO)	10A, 250Vac, cosφ=1, 105°C 12A, 250Vac, cosφ=1, 85°C	50K 25K
GQ-**-1**DM2F	M(NO)	16A, 277Vac, cosφ=0.75, 105°C 16A, 24Vdc, 105°C, L/R=0	50K 10K

#### CQC21002325301 (EXCEL CELL ELECTRONIC ANHUI CO., LTD.)

GB/T 21711.1; GB 4943.1; IEC 61810-1

Model	Contact	load	Cycles
GQ-**-1**LM1	M(NO)	10A, 250Vac, cosφ=1, 85°C 10A, 30Vdc, 85°C, L/R=0	10K 10K

#### CQC25002458263 (EXCEL CELL ELECTRONIC CO., LTD.)

GB/T 21711.1; GB 4943.1; IEC 61810-1

Model	Contact	load	Cycles
GQ-**-1**LM1	M(NO)	10A, 250Vac, cosφ=1, 85°C 10A, 30Vdc, 85°C, L/R=0	10K 10K
GQ-**-1**DM2F	M(NO)	16A, 250Vac, cosφ=1, 85°C 16A, 24Vdc, 85°C, L/R=0	10K 10K

#### TUV R50121172 IEC 61810-1

Model	Contact	load	Cycles
GQ-**-1**LM1	M(NO)	10A, 250Vac, cosφ=1, 85°C 12A, 125Vac, cosφ=1, 85°C 10A, 30Vdc, 85°C, L/R=0	100K 60K 30K
GQ-**-1**LM1F	M(NO)	10A, 250Vac, cosφ=1, 105°C 12A, 125Vac, cosφ=1, 105°C 10A, 30Vdc, 105°C, L/R=0	70K 10K 20K
GQ-**-1**DM2F	M(NO)	16A, 277Vac, cosφ=0.75, 105°C 16A, 24Vdc, 105°C, L/R=0	50K 10K
GQ-**-1**DM2F-2	M(NO)	20A, 250Vac, cosφ=0.75, 85°C 20A, 24Vdc, 85°C, L/R=0	10K 10K

#### TUV R50121172 IEC 62368-1

Model	Contact	load	Cycles
GQ-**-1**LM1	M(NO)	10A, 250Vac, cosφ=1, 105°C 10A, 30Vdc, 105°C, L/R=0	10K 10K
GQ-**-1**DM2F	M(NO)	16A, 277Vac, cosφ=0.75, 105°C 16A, 24Vdc, 105°C, L/R=0	10K 10K
GQ-**-1**DM2F-2	M(NO)	20A, 250Vac, cosφ=0.75, 85°C 20A, 24Vdc, 85°C, L/R=0	10K 10K

#### TUV R50121172 IEC 60730-1

Model	Contact	load	Cycles
GQ-**-1**DM2F	M(NO)	16A, 277Vac, cosφ=0.75, 105°C	10K
GQ-**-1**DM2F-2	M(NO)	20A, 250Vac, cosφ=0.75, 85°C 20A, 24Vdc, 85°C, L/R=0	10K





**Rely on ECE's Relays,  
and You Always Relax!**

## ■ SPECIFICATIONS( AT INITIAL VALUE)

Contact Resistance	100 mΩ Max. @1A,6VDC
Operate Time	10 mSec. Max.
Release Time	5 mSec. Max.
Dielectric Strength	Between coil & Contact: 4000VAC at 50/60Hz for one minute Between Contacts: 1000VAC at 50/60Hz for one minute
Surge Strength	10,000V (between coil &contact 1.2x50μSec.)
Insulation Resistance	100MΩ Min. at 500VDC
Max. On/OFF Switching	Electrical: 6 Cycles per Minute Mechanical: 300 Cycles per Minute
Temperature Range	-40°C~+105°C (Explosion proof version -40°C~+80°C)
Humidity Range	45~85%RH
Coil Temperature Rise	40°C Max.
Vibration	Destruction: 10 to 55 to 10 Hz, 0.75 mm single amplitude(1.5mm double amplitude) Malfunction: 10 to 55 to 10 Hz, 0.75 mm single amplitude(1.5mm double amplitude)
Shock	Destruction: 1,000 m/s <sup>2</sup> Malfunction: 100 m/s <sup>2</sup>
Mechanical Life	10 <sup>7</sup> operations at no load condition.
Weight	About 5.3g

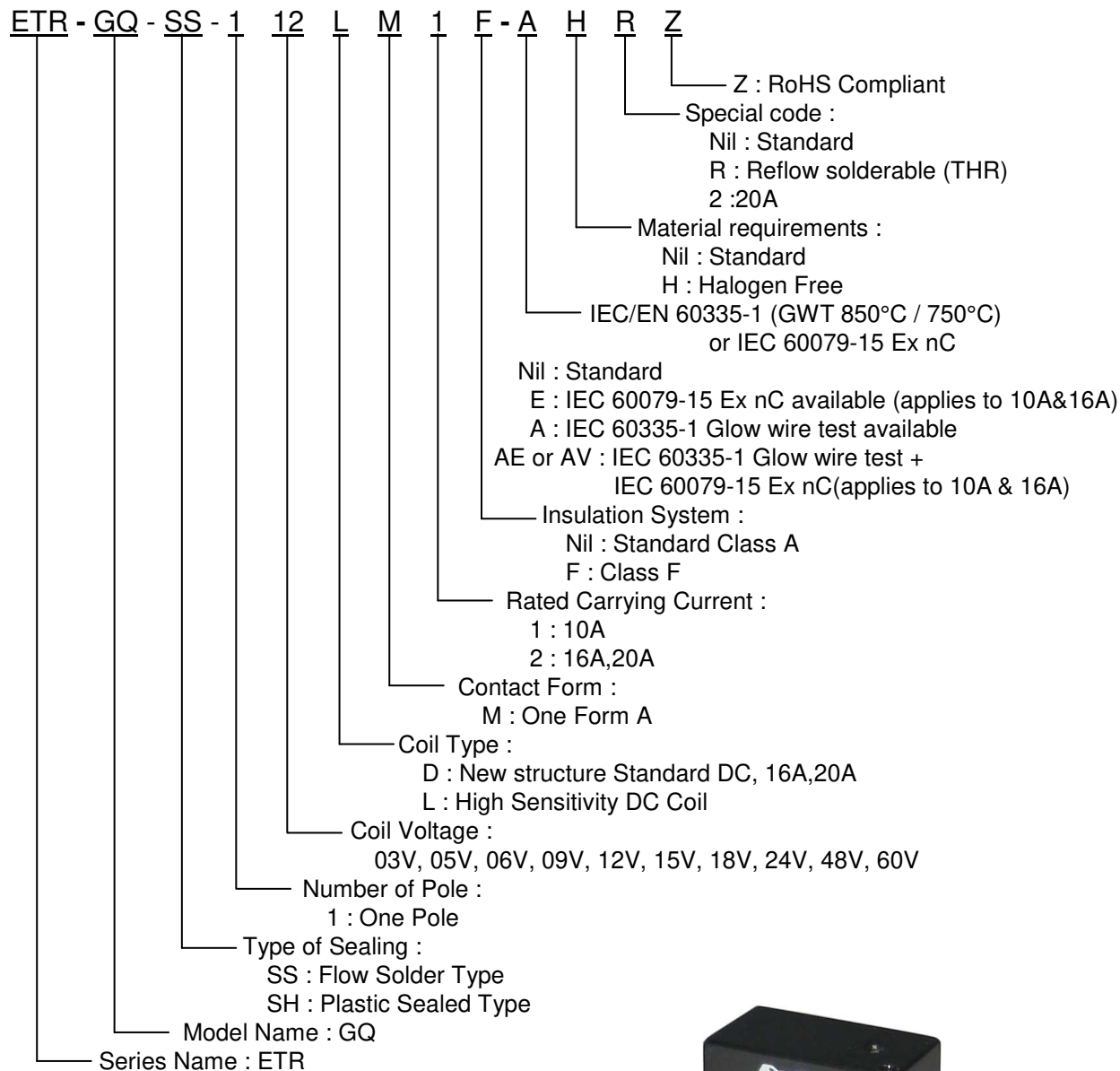
## ■ COIL SPECIFICATION AT 20°C

Coil Sensitivity	Nominal Voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Power Consumption (W)	Pull-In Voltage (VDC)	Drop-Out Voltage (VDC)	Max. Allowable Voltage (VDC)
GQ (LM1)	3	67	45	Abt. 0.20	80% Max.	5% Min.	110%
	5	40	125				
	6	33.3	180				
	9	22.5	400				
	12	16.7	720				
	15	13.3	1,125				
	18	11.1	1,620				
	24	8.3	2,800				
	48	4.2	11,520				

Coil Sensitivity	Nominal Voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω±10%)	Power Consumption (W)	Pull-In Voltage (VDC)	Drop-Out Voltage (VDC)	Max. Allowable Voltage (VDC)
GQ (DM2F)	5	71.4	70	Abt. 0.36	80% Max.	5% Min.	110%
	6	60	100				
	9	40	225				
	12	30	400				
	15	24	625				
	18	20	900				
	24	15	1,600				
	48	7.5	6,400				
	60	6	10,000				



## ■ PART NUMBER SYSTEM



Marking without: "ETR" & "Z".

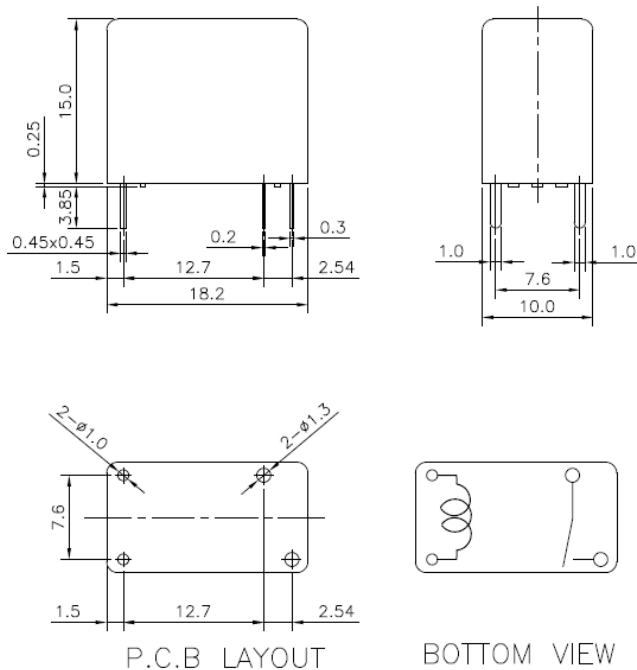
\* When ordering 16A or 20A , please choose DM2F TYPE





**DIMENSIONS** ( $\leq 5\text{mm} \pm 0.2\text{mm}$ ,  $> 5\text{mm} \pm 0.3\text{mm}$ , the tolerance of PCB thru hole:  $+0.1\text{mm}$ )

**LM1**



**DM2F**

