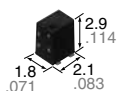
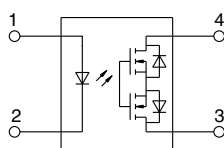


C×R type VSSOP package
60 V and 100 V load voltage

PhotoMOS[®]
RF VSSOP 1 Form A C×R
(AQY22○○○T)



mm inch



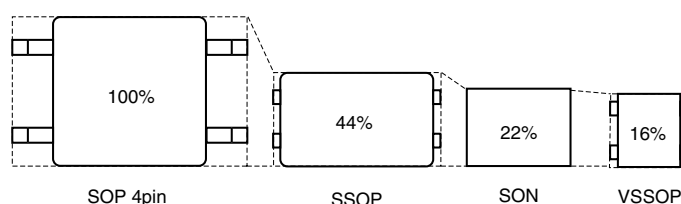
RoHS compliant

FEATURES

1. Miniature VSSOP package

4.6 mm² mounting area achieved. Approx. 29% less than previous product (SON type).

Contributes to the miniaturization of instruments and higher density mounting.



2. Load voltage: 60 V and 100 V

3. Low C×R

Low on resistance and low output capacitance available

• 60 V load voltage: AQY222R2T

Output capacitance: Typ. 27 pF, On resistance: Typ. 0.8Ω

• 100 V load voltage: AQY225R3T

Output capacitance: Typ. 5.8 pF, On resistance: Typ. 8.8Ω

TYPICAL APPLICATIONS

1. Measuring and testing equipment

IC tester, Probe card, Board tester and other testing equipment

2. Telecommunication equipment

*Does not support automotive applications.

TYPES

Type	Output rating*1		Part No. (Tape and reel packing style)*2		Packing quantity in the tape and reel
	Load voltage	Load current	Picked from the 1 and 4-pin side	Picked from the 2 and 3-pin side	
AC/DC dual use	60 V	400 mA	AQY222R2TY	AQY222R2TW	1,000 pcs.
	100 V	120 mA	AQY225R3TY	AQY225R3TW	

Notes: *1. Indicate the peak AC and DC values.

*2. Only tape and reel package is available.

For space reasons, only "2R2" or "5R3" is marked on the product as the part number.

RATING

1. Absolute maximum ratings (Ambient temperature: 25°C 77°F)

Item		Symbol	AQY222R2T	AQY225R3T	Remarks
Input side	LED forward current	I_F	50 mA		
	LED reverse voltage	V_R	5 V		
	Peak forward current	I_{FP}	1 A		$f = 100 \text{ Hz}$, Duty factor = 0.1%
	Power dissipation	P_{in}	75 mW		
Output side	Load voltage (peak AC)	V_L	60 V	100 V	
	Continuous load current	I_L	0.4 A	0.12 A	Peak AC, DC
	Peak load current	I_{peak}	1.2 A	0.3 A	100 ms (1shot), $V_L = \text{DC}$
	Power dissipation	P_{out}	250 mW		
Total power dissipation		P_T	300 mW		
I/O isolation voltage		V_{iso}	200 Vrms		
Ambient temperature	Operating	T_{opr}	-40 to +85°C -40 to +185°F		(Non-icing at low temperatures)
	Storage	T_{stg}	-40 to +100°C -40 to +212°F		

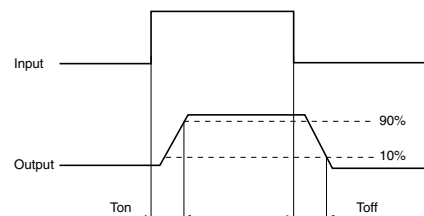
2. Electrical characteristics (Ambient temperature: 25°C 77°F)

Item			Symbol	AQY222R2T	AQY225R3T	Condition
Input	LED operate current	Typical	I_{Fon}	0.4 mA		AQY222R2T: $I_L = 400 \text{ mA}$ AQY225R3T: $I_L = 80 \text{ mA}$
		Maximum		3 mA		
	LED turn off current	Minimum	I_{Foff}	0.1 mA		
		Typical		0.35 mA		
LED dropout voltage	Typical	V_F	1.14 V (1.35 V at $I_F = 50 \text{ mA}$)		$I_F = 5 \text{ mA}$	
	Maximum		1.5 V			
Output	On resistance	Typical	R_{on}	0.8 Ω	8.8 Ω	AQY222R2T: $I_F = 5 \text{ mA}$, $I_L = 400 \text{ mA}$ AQY225R3T: $I_F = 5 \text{ mA}$, $I_L = 80 \text{ mA}$ Within 1 s
		Maximum		1.25 Ω	14 Ω	
	Output capacitance	Typical	C_{out}	27 pF	5.8 pF	$I_F = 0 \text{ mA}$, $V_B = 0 \text{ V}$, $f = 1 \text{ MHz}$
		Maximum		40 pF	8 pF	
Off state leakage current	Typical	I_{Leak}	—		$I_F = 0 \text{ mA}$, $V_L = \text{Max.}$	
	Maximum		*10 nA			
Transfer characteristics	Turn on time**	Typical	T_{on}	0.12 ms	0.04 ms	AQY222R2T: $I_F = 5 \text{ mA}$, $V_L = 10 \text{ V}$, $R_L = 100 \Omega$ AQY225R3T: $I_F = 5 \text{ mA}$, $V_L = 10 \text{ V}$, $R_L = 125 \Omega$
		Maximum		0.5 ms		
	Turn off time**	Typical	T_{off}	0.08 ms	0.05 ms	
		Maximum		0.2 ms		
I/O capacitance	Typical	C_{iso}	0.4 pF		$f = 1 \text{ MHz}$, $V_B = 0 \text{ V}$	
	Maximum		1.5 pF			

Note: Variation possible through combinations of output capacitance and on resistance. For more information, please contact our sales office in your area.

*Available as custom orders (1 nA or less)

**Turn on/Turn off time



3. Recommended operating conditions (Ambient temperature: 25°C 77°F)

Please use under recommended operating conditions to obtain expected characteristics.

Item		Symbol	Min.	Max.	Unit
LED current		I_F	5	30	mA
AQY222R2T	Load voltage (Peak AC)	V_L	—	30	V
	Continuous load current	I_L	—	0.4	A
AQY225R3T	Load voltage (Peak AC)	V_L	—	50	V
	Continuous load current	I_L	—	0.12	A

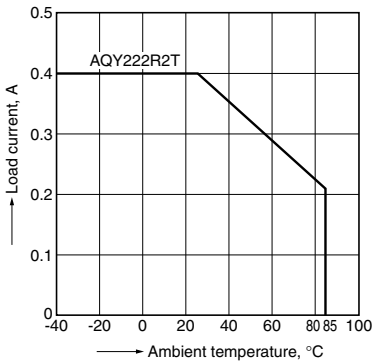
■ These products are not designed for automotive use.

If you are considering to use these products for automotive applications, please contact your local Panasonic Corporation technical representative.

REFERENCE DATA

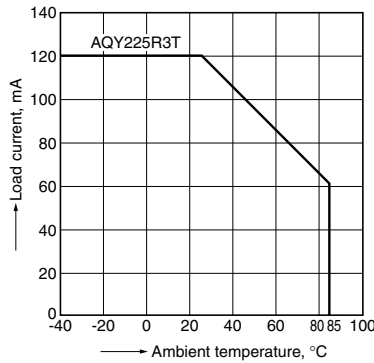
1.-(1) Load current vs. ambient temperature characteristics

Allowable ambient temperature: -40 to +85°C
-40 to +185°F



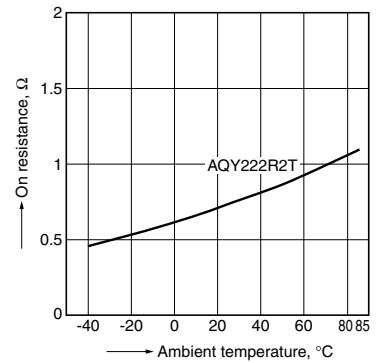
1.-(2) Load current vs. ambient temperature characteristics

Allowable ambient temperature: -40 to +85°C
-40 to +185°F



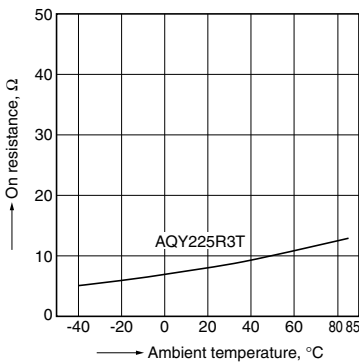
2.-(1) On resistance vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4
LED current: 5 mA; Load voltage: 10V (DC)
Continuous load current: Max. (DC)



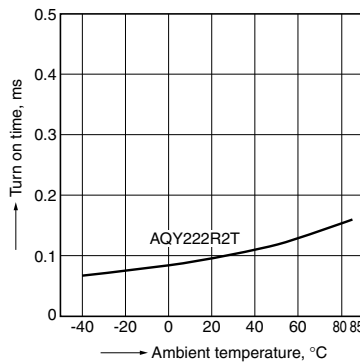
2.-(2) On resistance vs. ambient temperature characteristics

Measured portion: between terminals 3 and 4;
LED current: 5 mA; Load voltage: 10V (DC);
Continuous load current: 80mA (DC)



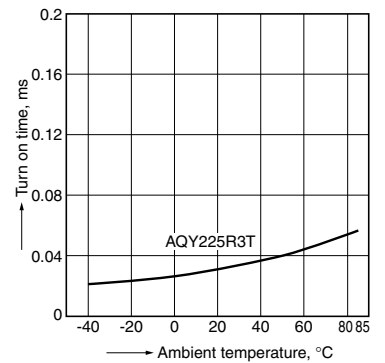
3.-(1) Turn on time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: 10V (DC);
Continuous load current: 100mA (DC)



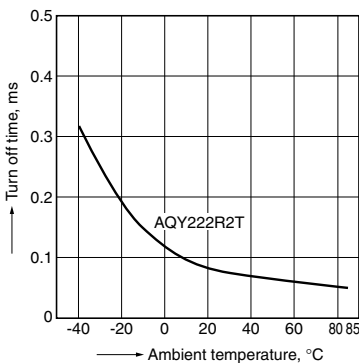
3.-(2) Turn on time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: 10V (DC);
Continuous load current: 80mA (DC)



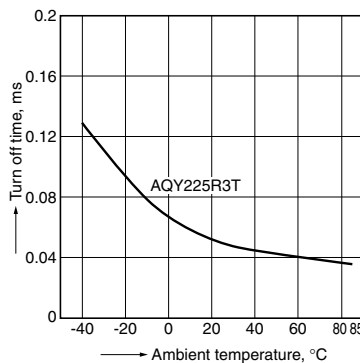
4.-(1) Turn off time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: 10V (DC);
Continuous load current: 100mA (DC)



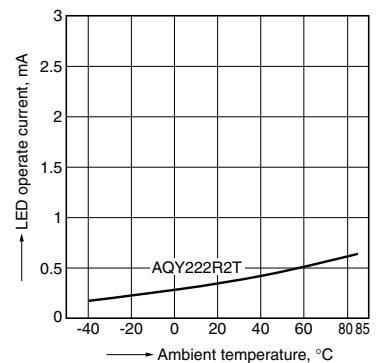
4.-(2) Turn off time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: 10V (DC);
Continuous load current: 80mA (DC)



5.-(1) LED operate current vs. ambient temperature characteristics

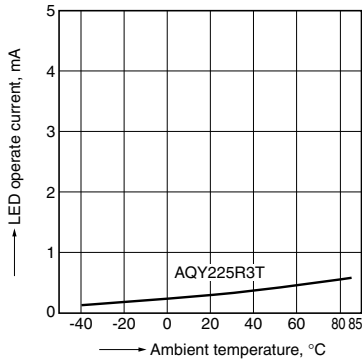
Load voltage: 10V (DC);
Continuous load current: 400mA (DC)



RF VSSOP 1 Form A CxR (AQY22000T)

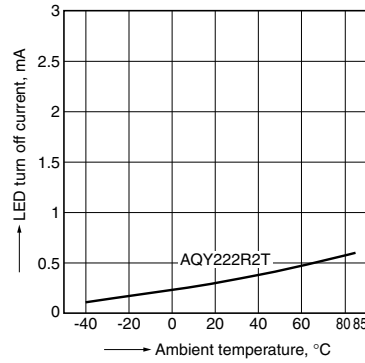
5.-(2) LED operate current vs. ambient temperature characteristics

Load voltage: 10V (DC);
Continuous load current: 80mA (DC)



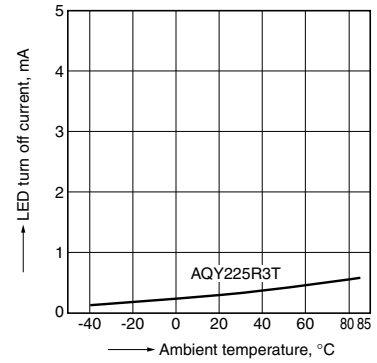
6.-(1) LED turn off current vs. ambient temperature characteristics

Load voltage: 10V (DC);
Continuous load current: 400mA (DC)



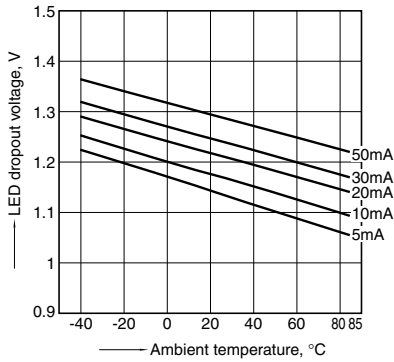
6.-(2) LED turn off current vs. ambient temperature characteristics

Load voltage: 10V (DC);
Continuous load current: 80mA (DC)



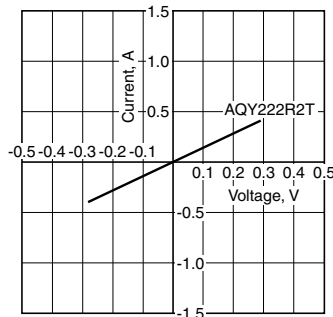
7. LED dropout voltage vs. ambient temperature characteristics

LED current: 5 to 50 mA



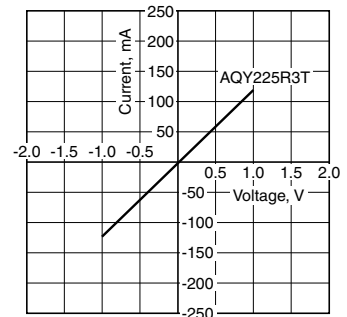
8.-(1) Current vs. voltage characteristics of output at MOS portion

Measured portion: between terminals 3 and 4;
Ambient temperature: 25°C 77°F



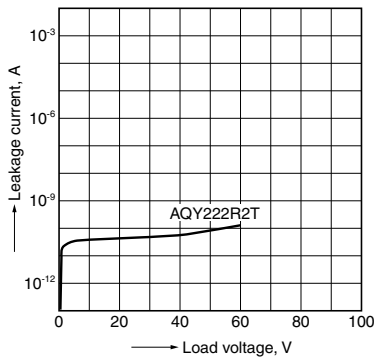
8.-(2) Current vs. voltage characteristics of output at MOS portion

Measured portion: between terminals 3 and 4;
Ambient temperature: 25°C 77°F



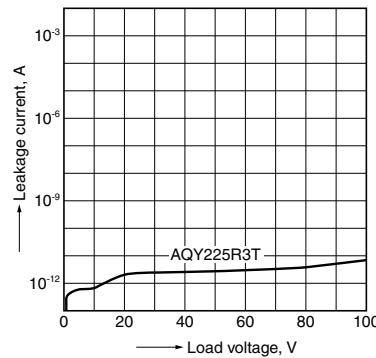
9.-(1) Off state leakage current vs. load voltage characteristics

Measured portion: between terminals 3 and 4;
Ambient temperature: 25°C 77°F



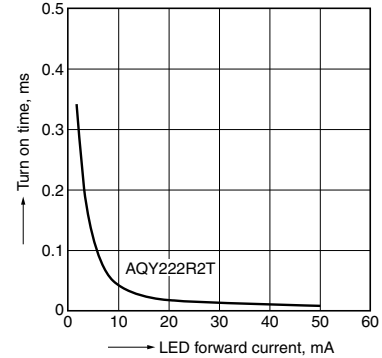
9.-(2) Off state leakage current vs. load voltage characteristics

Measured portion: between terminals 3 and 4;
Ambient temperature: 25°C 77°F



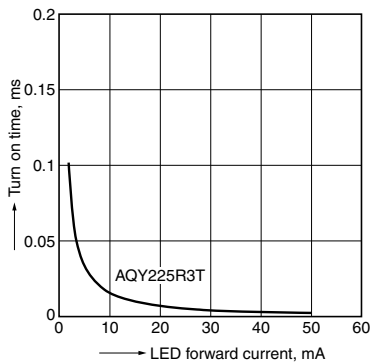
10.-(1) Turn on time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4;
Load voltage: 10V (DC); Continuous load current: 100mA (DC); Ambient temperature: 25°C 77°F



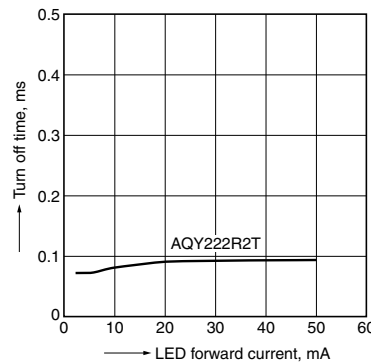
10.-(2) Turn on time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4;
Load voltage: 10V (DC); Continuous load current: 80mA (DC); Ambient temperature: 25°C 77°F



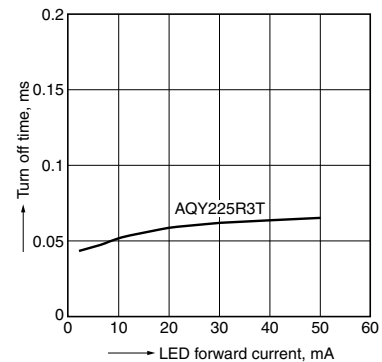
11.-(1) Turn off time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4;
Load voltage: 10V (DC); Continuous load current: 100mA (DC); Ambient temperature: 25°C 77°F



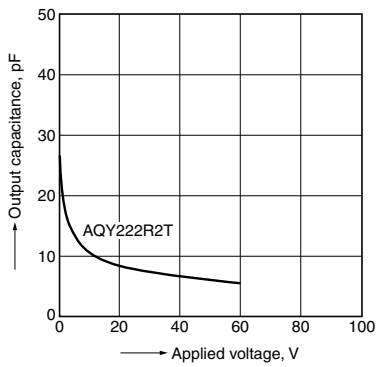
11.-(2) Turn off time vs. LED forward current characteristics

Measured portion: between terminals 3 and 4;
Load voltage: 10V (DC); Continuous load current: 80mA (DC); Ambient temperature: 25°C 77°F



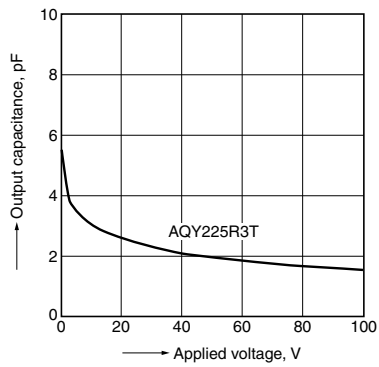
12.-(1) Output capacitance vs. applied voltage characteristics

Measured portion: between terminals 3 and 4;
 Frequency: 1 MHz;
 Ambient temperature: 25°C 77°F



12.-(2) Output capacitance vs. applied voltage characteristics

Measured portion: between terminals 3 and 4;
 Frequency: 1 MHz;
 Ambient temperature: 25°C 77°F



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