

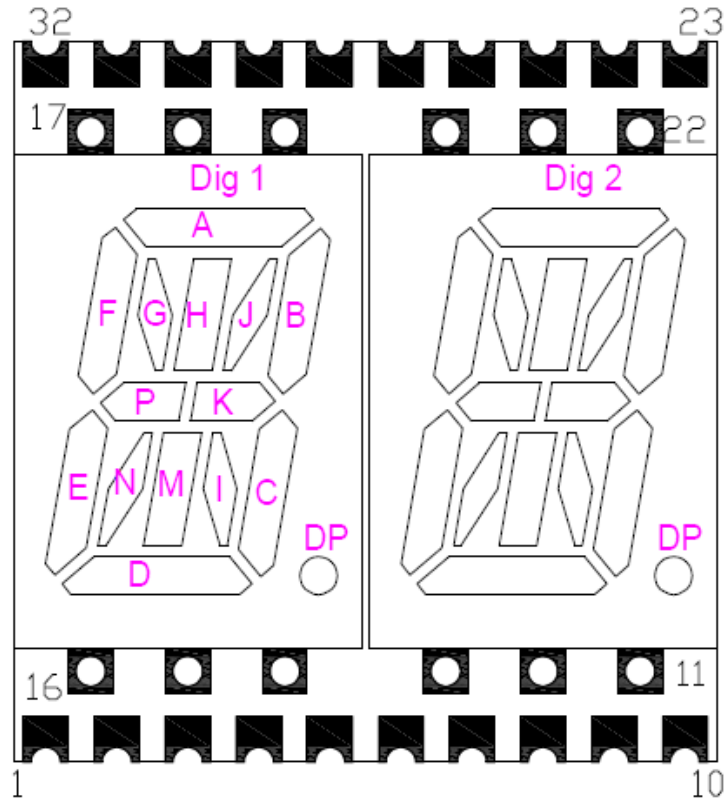


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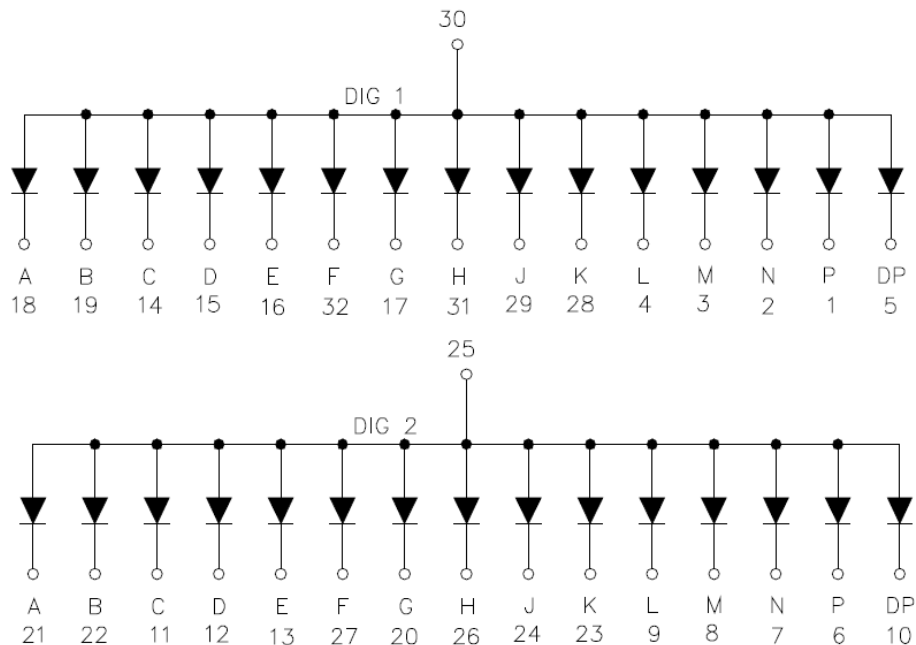
SMA4028PG-C G/W

0.4" Pure Green Dual Digit Alphanumeric SMD Display

ALL LIGHT ON SEGMENTS FEATURE



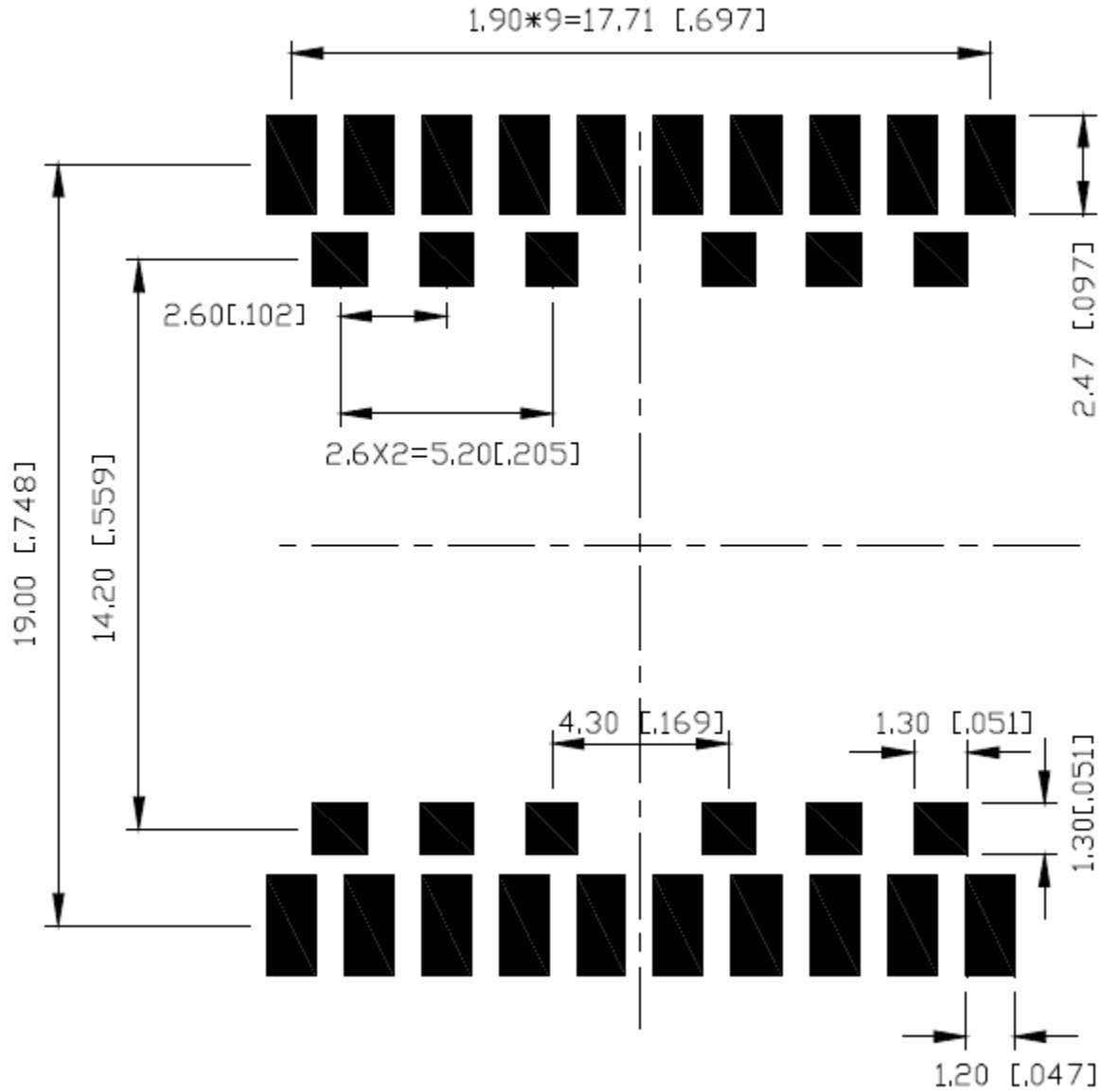
INTERNAL CIRCUIT DIAGRAMS





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SMA4028PG-C G/W
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SOLDERING PAD SIZE





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ABSOLUTE MAXIMUM RATING

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Power Dissipation (Per Dice)	P _D	114	mW
Continuous Forward Current (Per Dice)	I _F	30	mA
Peak Current (Per Dice, duty cycle 1/10,1KHz)	I _{FP}	100	mA
Derating Liner from 25°C(Per Dice)	$\Delta I_F/\Delta T$	0.4	mA/°C
Reverse Voltage (Per Dice)	V _R	5	V
Electrostatic discharge(HBM)	ESD	1500	V
Operating Temp.	T _{OPR}	-40 ~ +105	°C
Storage Temp.	T _{STG}	-40 ~ +105	°C
Hand Soldering Temp.	T _{sol}	350	°C

ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage (Per Segment)	V _F	I _F =20mA	--	3.2	3.8	V
Peak Wavelength	λ_p		--	525	--	nm
Luminous Intensity (Per Segment)	I _V	I _F =10mA	--	100	--	mcd
Luminous Intensity Matching Ratio	I _V -m		--	--	2:1	--
Reverse Current	I _r	V _R =5V	--	--	50	μA



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LUMINOUS GENERAL LV BIN GRADE

($I_f = 10\text{mA}$)

Bin	Min	Max	Unit
N	44.096	70.554	mcd
P	70.555	112.888	
Q	112.889	180.622	

Notes: Tolerance: $\pm 20\%$

COLOR RANK LIMITS

($I_f = 10\text{mA}$)

Bin	Min	Max	Unit
1	515	517	nm
2	517	519	
3	519	521	
4	521	523	
5	523	525	

Notes: Tolerance: $\pm 1\text{nm}$



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ELECTRICAL/OPTICAL CHARACTERISTICS CURVES

(Ta=25°C)

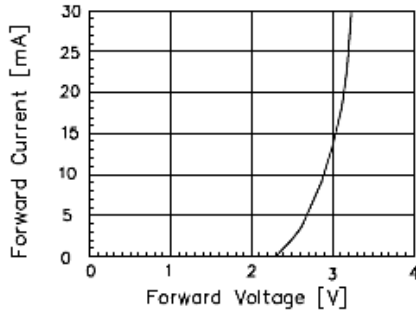


Fig 1. Forward Current vs. Forward Voltage

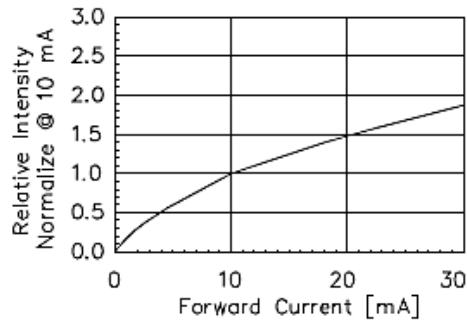


Fig 2. Relative Intensity vs. Forward Current

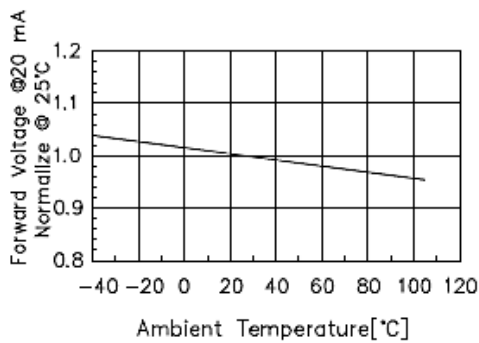


Fig 3. Forward Voltage vs. Temperature

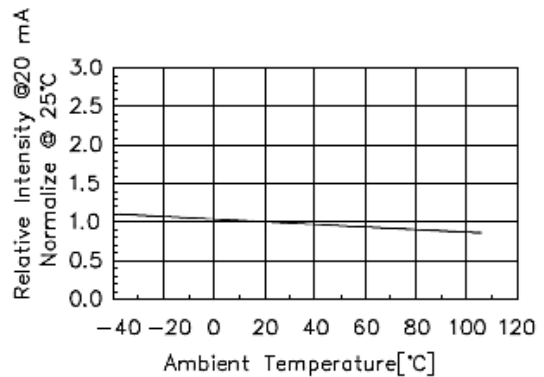


Fig 4. Relative Intensity vs. Temperature

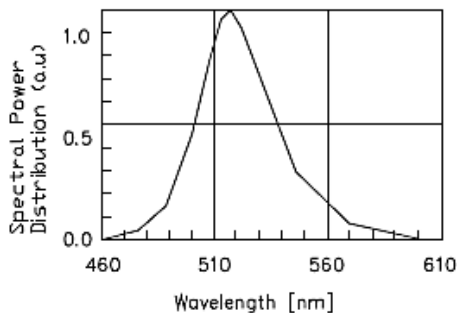


Fig 5. Spectral Power Distribution vs. Wavelength

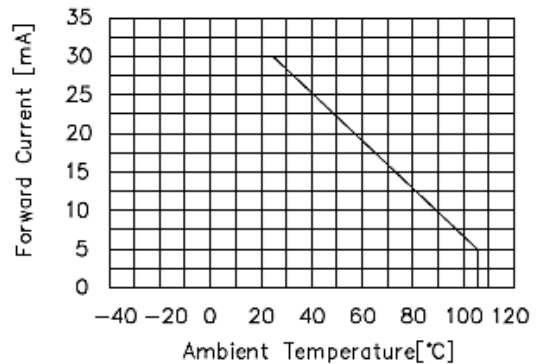


Fig 6. Forward current vs. Temperature



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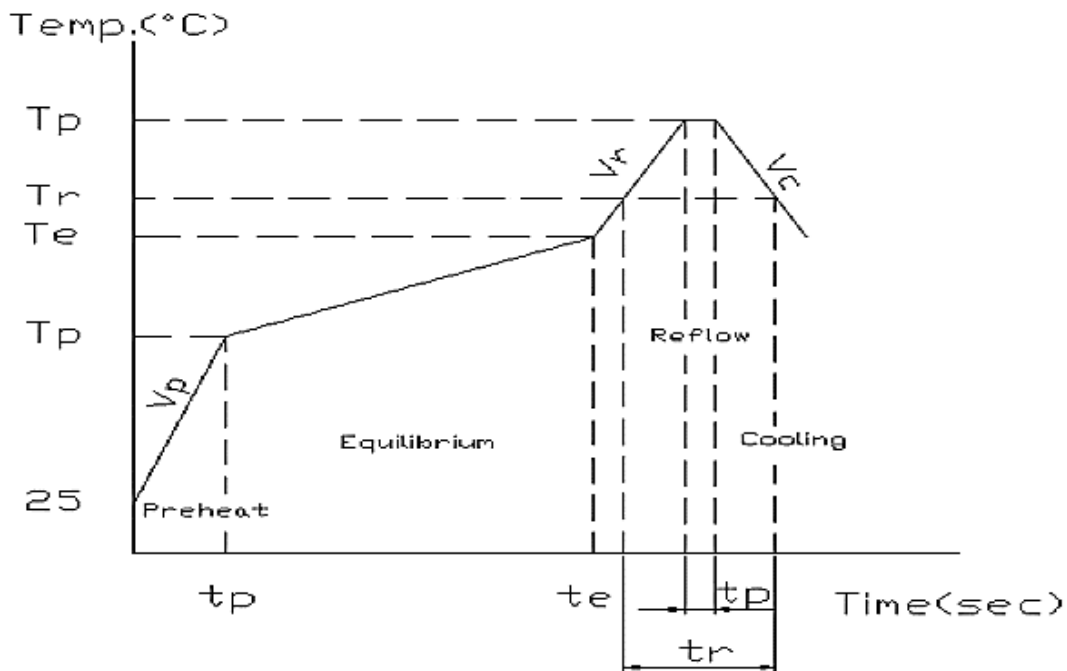
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SOLDERING CHARACTERISTICS

1. IR-Reflow Soldering Profile

Stage	Parameter	Symbol	Min.	Max.	Unit
Preheat	Ramp-up Rate	V_p	1	5	$^{\circ}\text{C}/\text{sec}$
	Temperature	T_p	150	--	$^{\circ}\text{C}$
	Time	t_p	--	--	Sec
Equilibrium	Ramp-up Rate	V_e	--	--	$^{\circ}\text{C}/\text{sec}$
	Temperature	T_e	150	200	$^{\circ}\text{C}$
	Time	t_e	60	120	Sec
Reflow	Ramp-up Rate	V_r	1	5	$^{\circ}\text{C}/\text{sec}$
	Temperature	T_r	220	--	$^{\circ}\text{C}$
	Time	t_r	--	60	Sec
	Peak Temperature	T_{rp}	--	260	$^{\circ}\text{C}$
	Peak Time	t_{rp}	--	10	Sec
Cooling	Ramp-down Rate	V_c	3	6	$^{\circ}\text{C}/\text{sec}$



2. Hand Soldering (Iron Condition)

1. Soldering Iron: 30W Max.
2. Temperature: 350 $^{\circ}\text{C}$ Max.
3. Soldering Time: 3 seconds Max. (1 time)
4. Distance: 1.6mm min.(from seating plane)

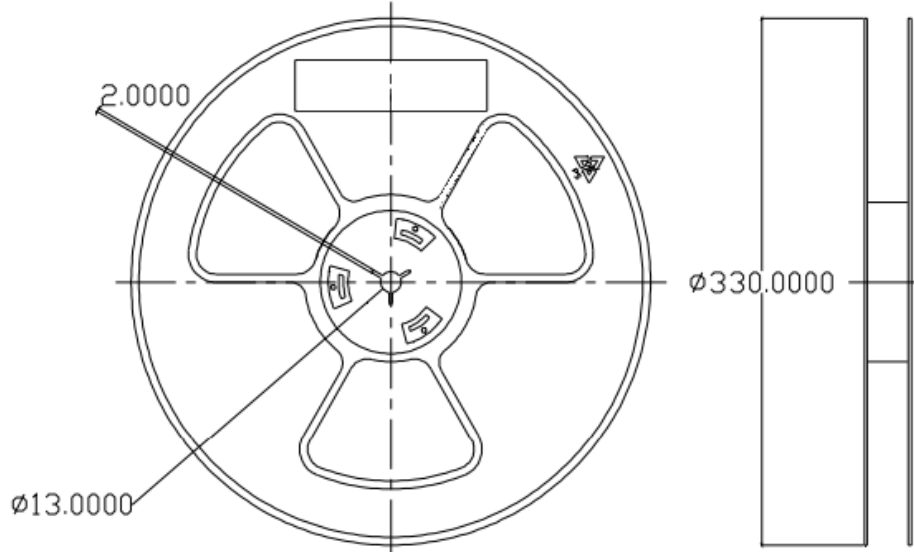


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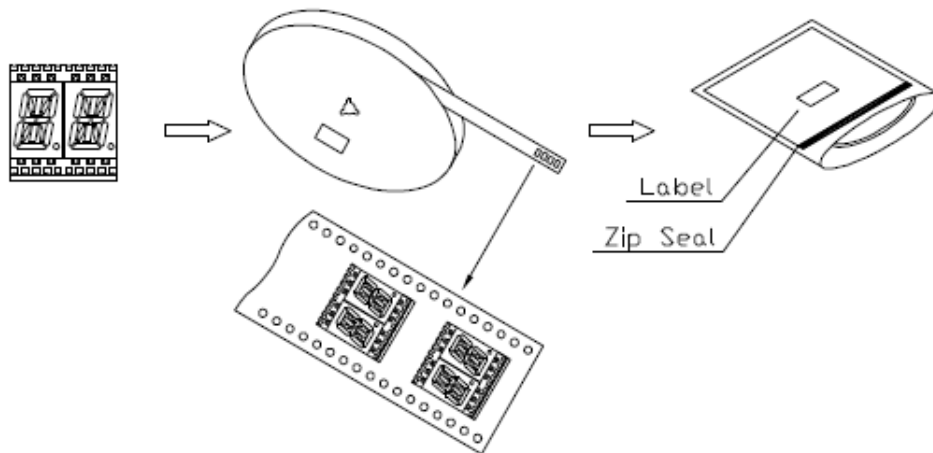
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REEL DIMENSION



PACKING & LABEL DIMENSIONS



Package Name	Size	Unit	Amount	Unit	Amount	Unit
Reel	Ø330	mm	1	Reel	750	Pcs
Bag	L450*W430	mm	1	Reel	750	Pcs
Outer Box	L430*W330*H270	mm	5	Bag	3750	Pcs



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STORAGE METHOD

Storage Conditions

Before opening the package:

- The LEDs should be kept at $-40^{\circ}\text{C}\sim 105^{\circ}\text{C}$, RH 45%~85%. The LEDs should be used within a year.
- When storing the LEDs, moisture proof packaging with absorbent material (silica gel) is recommended.

After opening the package:

- The LEDs should be kept at 30°C or less, 70%RH or less.
- The LEDs should be soldered within 672 hours (4 weeks) after opening the package.
- If unused LEDs remain, they should be stored in moisture proof packages, such as sealed containers with packages of moisture absorbent material (silica gel).
- It is recommended to return the LEDs to the original moisture proof bag and to reseal the moisture proof bag again.
- If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking is required and should be performed under the following condition: 24 hours at $65\pm 5^{\circ}\text{C}$.