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PIT5005T-CL7526

Transmissive Type Photo-Interrupter

Features

- High reliability
- Gap width = 5mm
- Slit width = 0.5mm
- Good spectral matching to Si photo detector
- RoHS compliance

Description

The PIT5005T-CL7526 is a transmissive type photo-interrupter which consist of an infrared emitting diode and an NPN silicon photo-transistor.

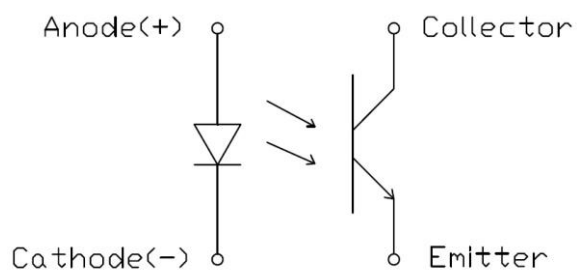
Applications

- Infrared sensor
- Printers
- Switch scanner

Package Outline



Schematic





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Absolute Maximum Rating at 25°C

Symbol	Parameters	Ratings	Units	Notes
T _{opr}	Operating Temperature	-25 ~ +85	°C	
T _{stg}	Storage Temperature	-40 ~ +85	°C	
T _{sol}	Soldering Temperature	260	°C	1
Emitter				
I _F	Continuous Forward Current	50	mA	
I _{FP}	Peak Forward Current	1	A	2
V _R	Reverse Voltage	5	V	
P _D	Power Dissipation at(or below) 25°C Free Air Temperature	75	mW	
Detector				
P _D	Collector Power Dissipation	75	mW	
I _C	Collector Current	20	mA	
B _{VCEO}	Collector-Emitter Voltage	35	V	
B _{VECO}	Emitter-Collector Voltage	5	V	



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Electro-Optical Characteristics TA = 25°C (unless otherwise specified)

Emitter Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V _F	Forward Voltage	I _F =20mA	-	1.20	1.50	V	2
		I _F =100mA	-	1.40	1.85		
		I _F =1A	-	2.60	4.00		
I _R	Reverse Current	V _R =5V	-	-	10	μA	
λ _p	Peak Wavelength	I _F =20mA	-	940	-	nm	

Detector Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
B _{VCEO}	Collector-Emitter Breakdown	I _C =100μA	35	-	-	V	
B _{VECO}	Emitter-Collector Breakdown	I _E =100μA	5	-	-	V	
I _{CEO}	Dark Current	V _{CE} =20V	-	-	100	nA	

Transfer Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I _C	Collect Current	V _{CE} =5V, I _F =10mA	0.2	0.5	0.95	mA	
V _{CE(sat)}	C-E Saturation Voltage	I _C =2mA, E _e =1mW/cm ²	-	-	0.4	V	
t _r	Rise Time	V _{CE} =5V, I _C =1mA R _L =1kΩ	-	15	-	μs	
t _f	Fall Time		-	15	-		

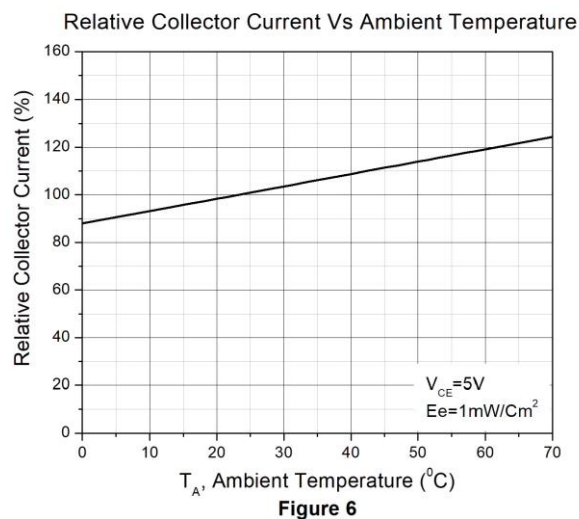
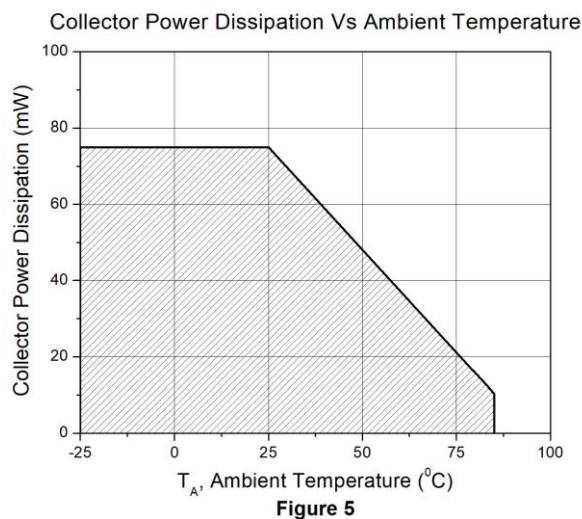
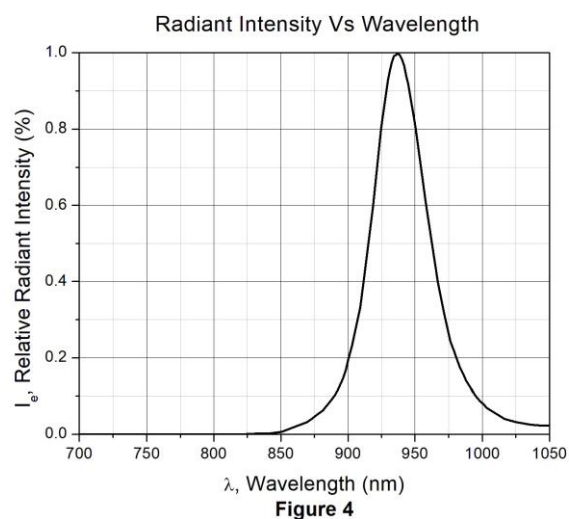
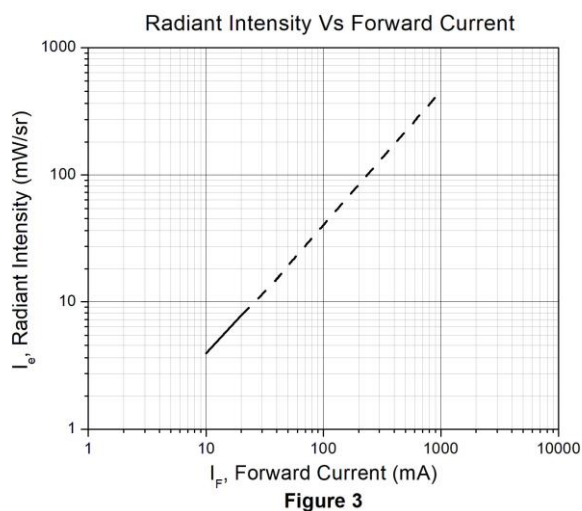
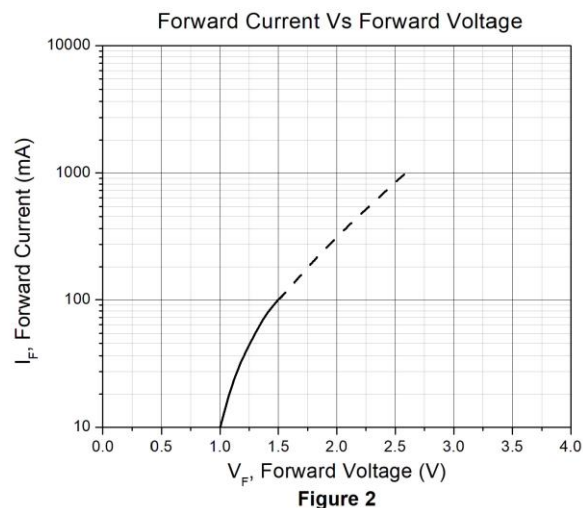
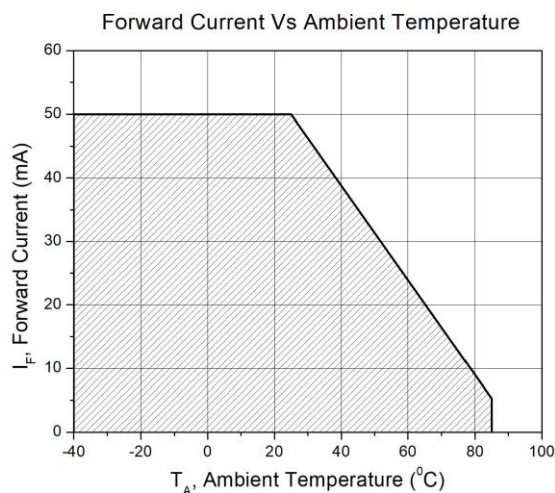
Notes:

1 : Soldering time ≤ 5 seconds.

2 : I_{FP} Conditions--Pulse Width ≤ 100μs and Duty ≤ 1%.

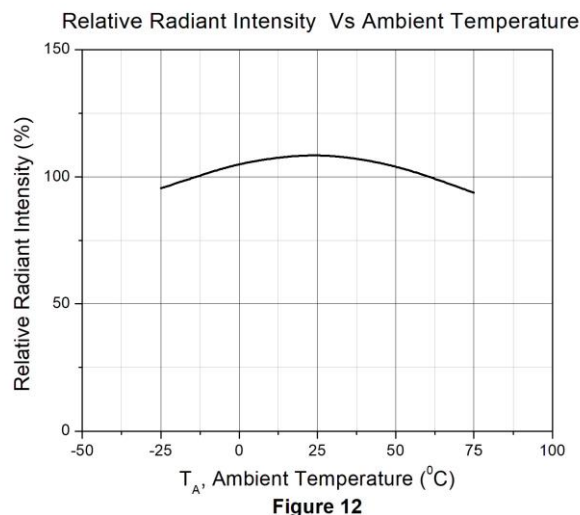
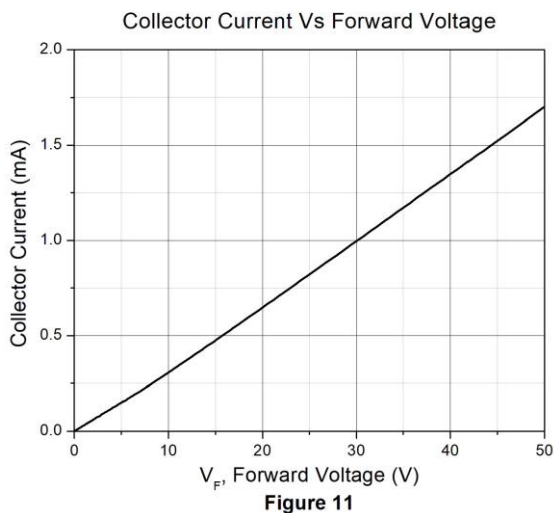
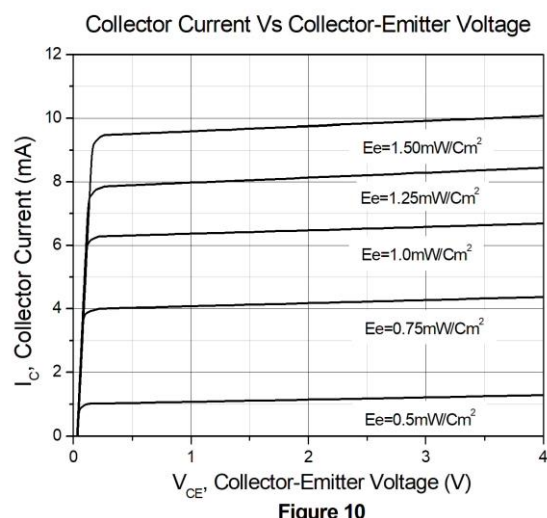
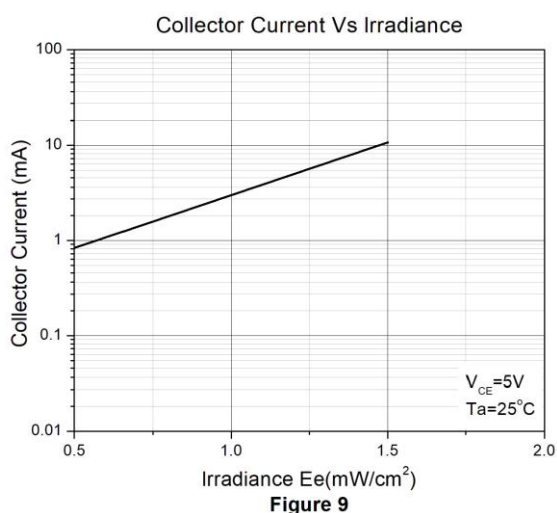
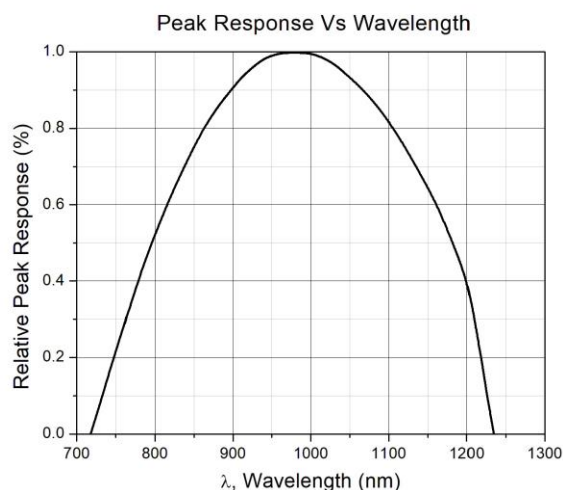
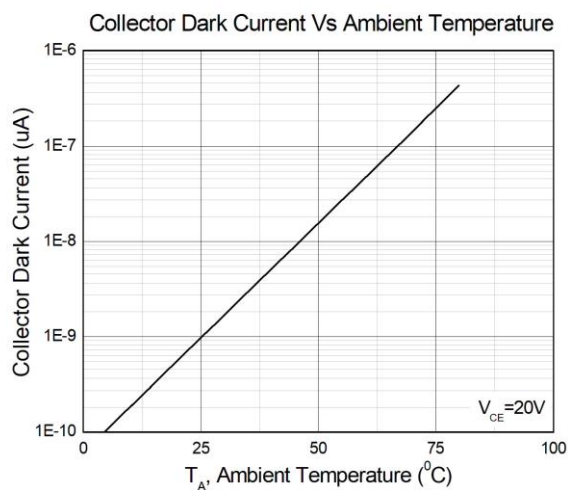


Typical Characteristic Curves





Typical Characteristic Curves

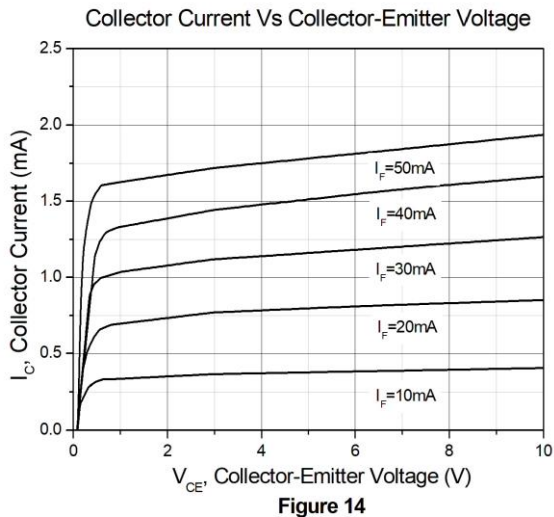
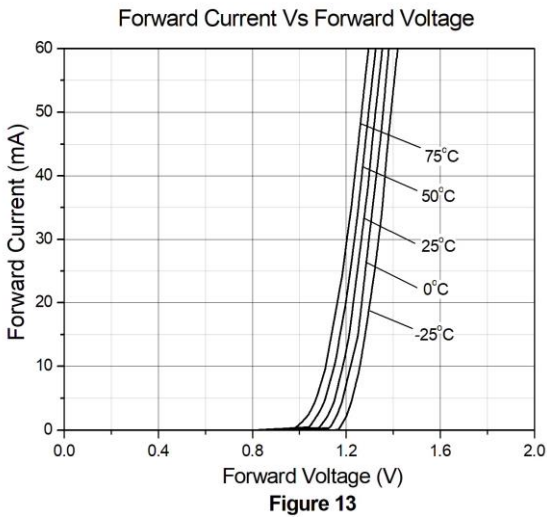




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Typical Characteristic Curves



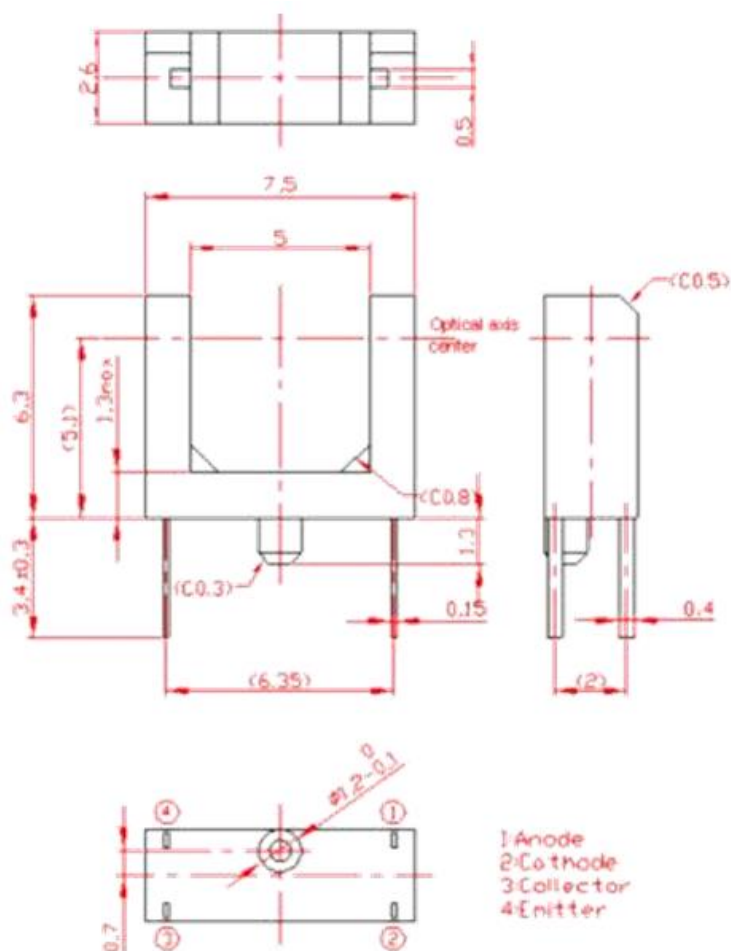


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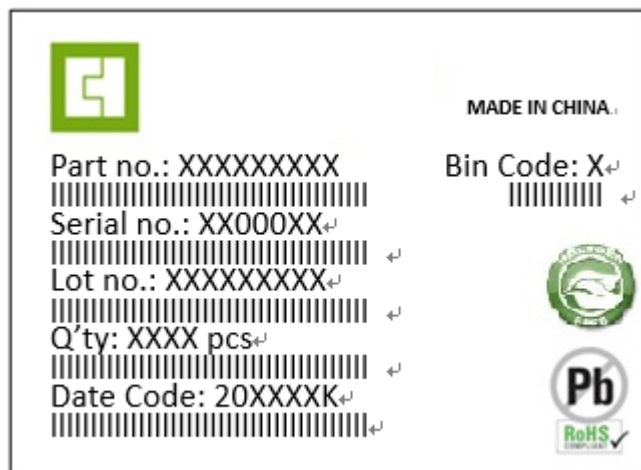
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Package Dimension *All dimensions are in mm, unless otherwise stated.*





Label Form Specification



Part no: CTM Production Number

Serial no: Production Number

Lot no: Lot number

Q'ty: Packing Quantity

Date Code: Manufacture Date

Bin Code: Ic Ranks

MADE IN CHINA: Production Place

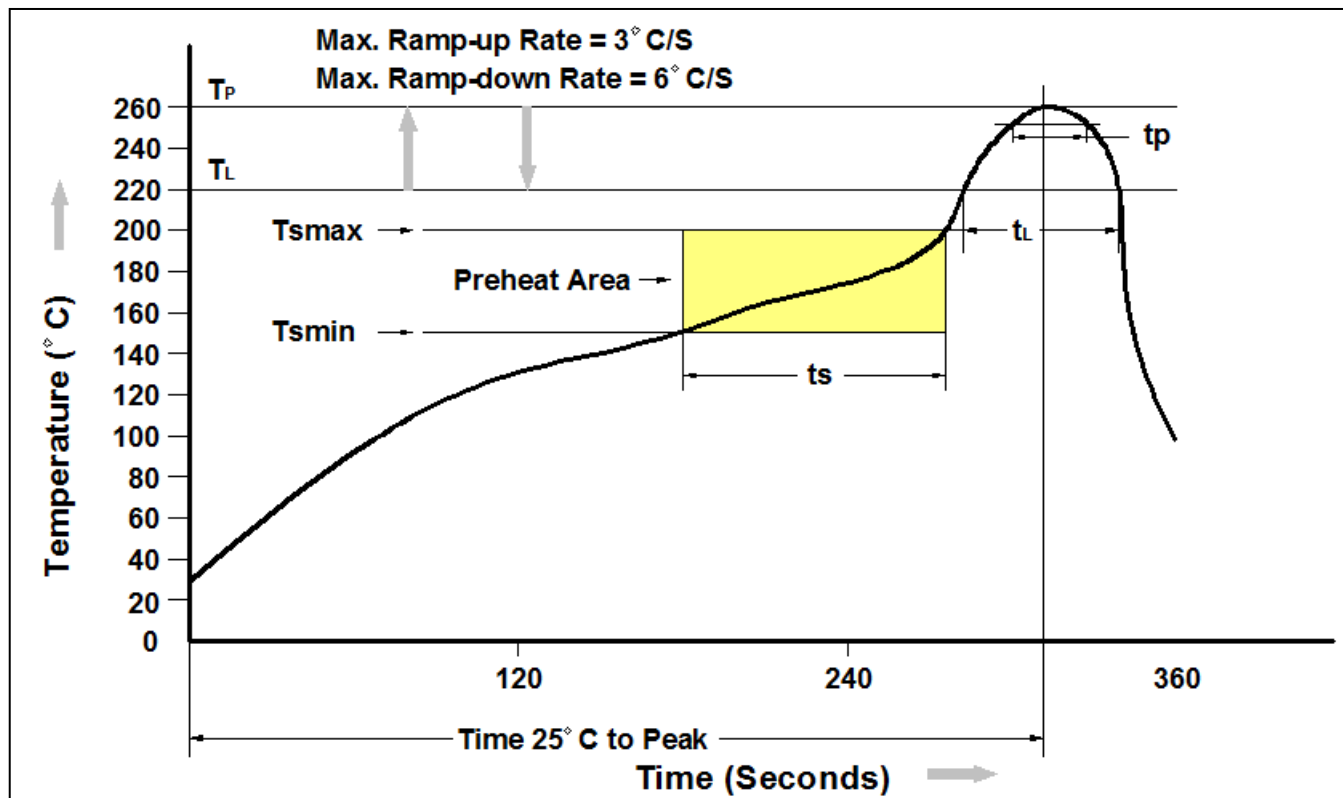
Storage Condition

1. Do not open moisture proof bag before the products are ready to use.
2. The moisture barrier bag should be stored at 40°C and 90%R.H. max. before opening.
Shelf life of non-opened bag is 12 months after the bag sealing date.
3. After opening the moisture barrier bag floor life is 72h at 30°C/60%RH. max. Unused LEDs should be resealed into moisture barrier bag. (Refer to J-STD-020 Standard)
4. If the moisture absorbent material has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the J-STD-033 Standard conditions.



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Reflow Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T _{smin})	150°C
Temperature Max. (T _{smax})	200°C
Time (t _s) from (T _{smin} to T _{smax})	60-120 seconds
Ramp-up Rate (t _L to t _P)	3°C/second max.
Liquidous Temperature (T _L)	217°C
Time (t _L) Maintained Above (T _L)	60 – 150 seconds
Peak Body Package Temperature	260°C +0°C / -5°C
Time (t _P) within 5°C of 260°C	30 seconds
Ramp-down Rate (T _P to T _L)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.



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