

Product Name: TK160F10N1L

Package Name: TO-220SM(W)

### 1. Thermal tests

Test Item	Test Condition	Failure Size / Sample Size
Heat resistance (Reflow)	Peak : 260 deg.C(a moment) Reflow zone : 230 deg.C 30 to 50 s Preheat : 180 to 190 deg.C , 60 to 120 s 2 times	0 / 32
Heat resistance (Iron)	Temperature of the iron tip : 400 deg.C Time : 3 s Once	0 / 32
Temperature cycling	- 55 deg.C(30 min) to 150 deg.C(30 min) 500 cycles	0 / 50
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### 2. Mechanical tests

Test Item	Test Condition	Failure Size / Sample Size
Solderability	Solder bath : Sn-Ag-Cu 245 deg.C , 5 s ,once (using Flux) Solder bath : Sn-Pb 230 deg.C , 5 s ,once (using Flux)	0 / 11
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-	-	-
-	-	-
-	-	-

### 3. Life tests

Test Item	Test Condition	Failure Size / Sample Size
Steady state operation	Ta = 25 deg.C, Tch = 175 deg.C ,2000 h	0 / 30
High temp. reverse bias	Ta = 175 deg.C, VGS = 20V ,2000 h	0 / 30
High temp. storage	Ta = 175 deg.C ,2000 h	0 / 30
High temp. high humidity storage	Ta = 85 deg.C, RH = 85% ,2000 h	0 / 30
Pressure cooker test	Ta = 121 deg.C(203kPa)(Unsaturated) ,96 h	0 / 20
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## Estimated Failure Rate

Product Name	Estimated failure rate
TK160F10N1L	0.18 Fit or less

Above estimated value is determined with the standard operation under the general environment:\*

\*The general environment here means the conditions of  $T_j = 55$  degree C and no application of surge and so on.

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Product Name: TK160F10N1L  
Package Name: TO-220SM(W)

### 1.Reflow

Number: 2 times maximum  
Peak : 260 deg.C(a moment)  
Reflow zone : 230 deg.C 30 to 50 seconds  
Preheat : 180 to 190 deg.C , 60 to 120 seconds

NOTE: Heat resistant condition are based on the device surface temperature.

An example of a temperature profile is shown in Fig.1.  
This profile has indicated the maximum of a device heat-resistance guarantee.  
Please set preheating temperature / heating temperature as the best temperature according to the kind of solder paste to use, within the limits of Fig.1.

Since this package is a dry bag product, from opening to the final reflow should take place within 2 weeks under the condition of 5-30 deg.C and less than 70%RH.

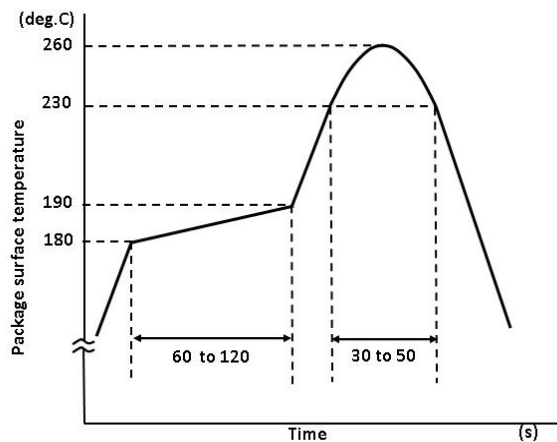


Fig.1 Example of Heat-resistant Temperature Profile

### 2.Others

We urge you to verify well before mounting to assure enough solder joint strength.

Always solder the Product in accordance with the heat-resistance mounting conditions set forth above. In the event the Product is soldered otherwise, the applicable product warranty, if any, is void.

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