DIPIPM equipped with a silicon chip : Mini DIPIPM Ver.7 reliability test results

Table 1. Reliability test results

Test Items 試験項目	Test conditions 試験条件	Number of samples 試料数	Number of failures 故障数
Resistance to soldering heat はんだ耐熱性	Solder temperature : 260℃ Time : 10seconds	5	0
Solderability はんだ付け性	Preheating : 100℃ Solder temperature : 250℃ Time : 10seconds	5	0
Temperature cycle 温度サイクル	-40℃～125℃ 30minutes each 100cycles	5	0
Terminal strength(pull) 端子強度（引張り）	Weight 10N 10seconds	5	0
Terminal strength(Bending) 端子強度（曲げ）	Weight 5N 90deg. Bend 2times	5	0
Mounting torque 締付けトルク	Mounting screw : M3 0.98N·m	5	0
High temperature storage 高温保存	T_a=125℃ 1000hours	5	0
Temperature humidity storage 高温高湿保存	T_a=60℃ RH=90% 1000hours	5	0
High-Temperature Reverse-Bias 高温逆バイアス	T_j=150℃ V_{CE}=0.85*V_{CES} 1000hours	5	0
Intermittent operating life 断続動作	△T_j=100℃ 5000cycles	5	0

Table 2. Failure criteria

Parameter 測定項目	Measurement conditions 測定条件	Criteria for failure 故障判定基準		Remarks 備考
		Lower Limit 下限	Upper Limit 上限	
I_{CES}	V_{CE}=Rated voltage	－	U.S.L.×2.0	
V_{EC}	-I_C=Rated current	－	U.S.L.×1.2	
$V_{CE(sat)}$	I_C=Rated current, V_D=V_{DB}=15V, V_{IN}=5V	－	U.S.L.×1.2	
V_F	I_F=10mA including voltage drop by limiting resistor	－	U.S.L.×1.2	
I_D	V_D=15V, V_{IN}=0V	－	U.S.L.×2.0	
I_{DB}	V_D=V_{DB}=15V, V_{IN}=0V	－	U.S.L.×2.0	
Dielectric withstand	2500Vrms, Sinusoidal, AC 1 minute, all connection pins to heat-sink plate	Break down		

Note : The reliability tests are performed the representative products for the product group.
The measurement items of each test are selected according to our standards.
The symbols in the table are as follows. U.S.L. : Upper Specification Limit

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