

SKFM10L60CW-D2

List

List.....	1
Package outline.....	2
Features.....	2
Mechanical data.....	2
Maximum ratings and electrical characteristics	2
Rating and characteristic curves.....	3
Pinning information.....	4
Marking.....	4
Suggested solder pad layout.....	4
Packing information.....	5
Reel packing.....	6
Suggested thermal profiles for soldering processes.....	6
High reliability test capabilities.....	7

SKFM10L60CW-D2

10A, 60V Low V_F Schottky Barrier Rectifiers

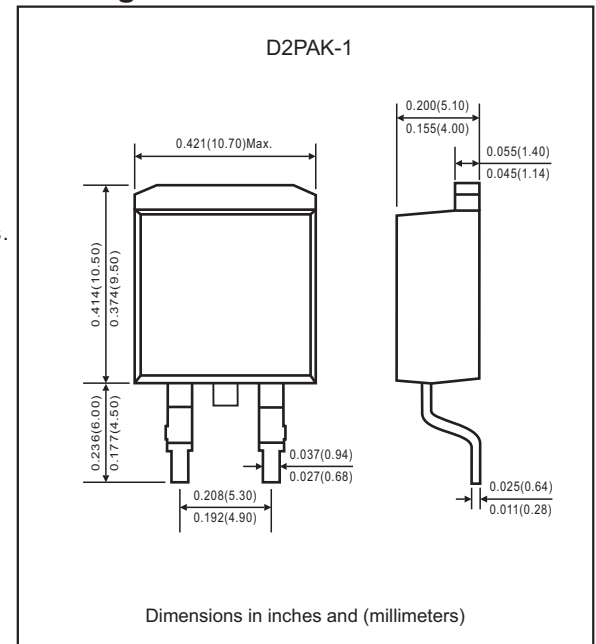
Features

- The plastic package carries underwrites laboratory flammability classification 94V-0.
- Construction utilizes void-free molded plastic technique.
- Low reverse leakage.
- High forward surge current capability.
- High temperature soldering guaranteed 260°C/10 seconds at terminals.
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC.
- Suffix "-H" indicates Halogen free parts, ex. SKFM10L60CW-D2-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, TO-263 / D2PAK-1
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated : 1.46 gram

Package outline



Maximum ratings and electrical characteristics (At $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	60	V
Maximum RMS voltage	V_{RMS}	42	V
Maximum DC blocking voltage	V_{DC}	60	V
Maximum average forward rectified (Per device)	I_{AV}	10.0	A
Current at $T_c=110^\circ\text{C}$ (Per diode)		5.0	
Peak forward surge current 8.3ms single half sine wave superimposed on rated load (JEDEC Method)	I_{FSM}	100.0	A
Typical thermal resistance	R_{BJC}	4.0	$^\circ\text{C/W}$
Operating junction temperature range	T_J	+150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^\circ\text{C}$

Electrical characteristics (At $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Type	Max	Unit
Maximum instantaneous forward voltage per diode at 5.0A	V_F	0.5	0.55	V
Maximum DC reverse current $T_A=25^\circ\text{C}$	I_R	50	200	μA
At rated DC blocking voltage $T_A=100^\circ\text{C}$		2	20	mA

Rating and characteristic curves (SKFM10L60CW-D2)

Fig.1 FORWARD CURRENT DERATING CURVE

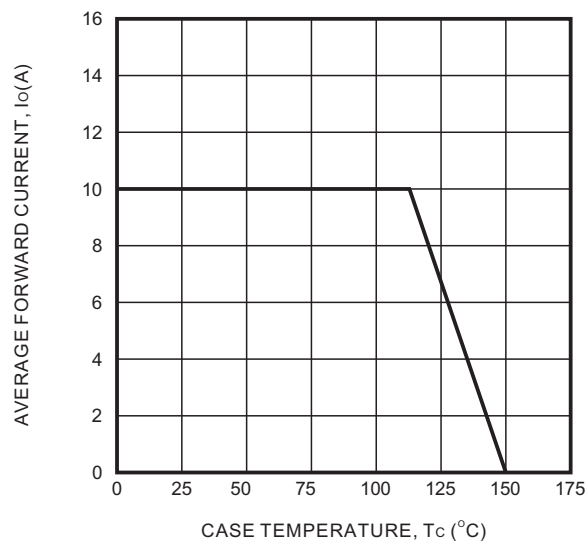


Fig.2 TYPICAL FORWARD CHARACTERISTICS

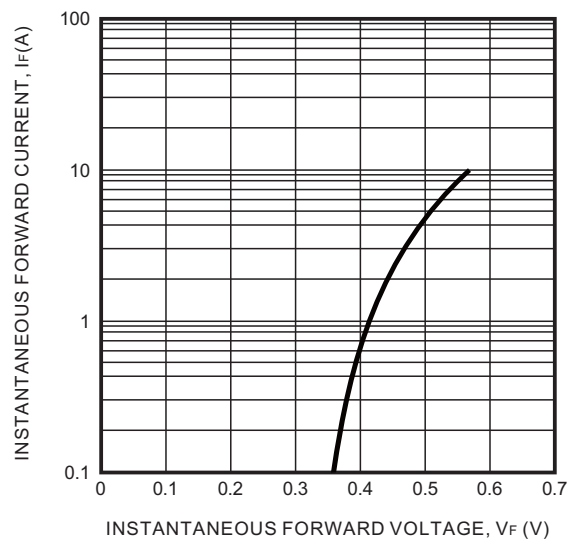


Fig.3 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

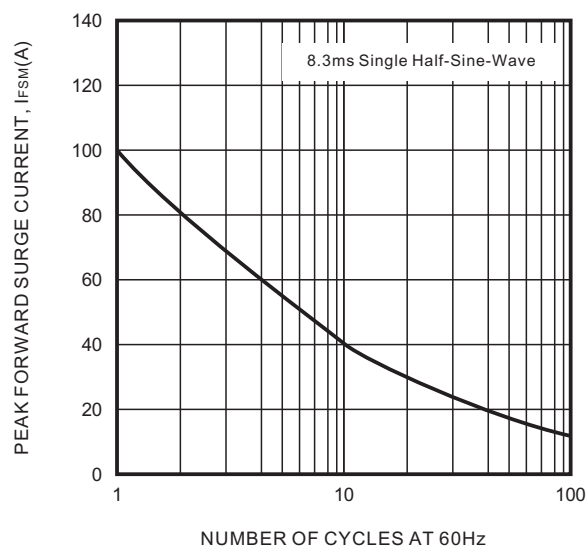
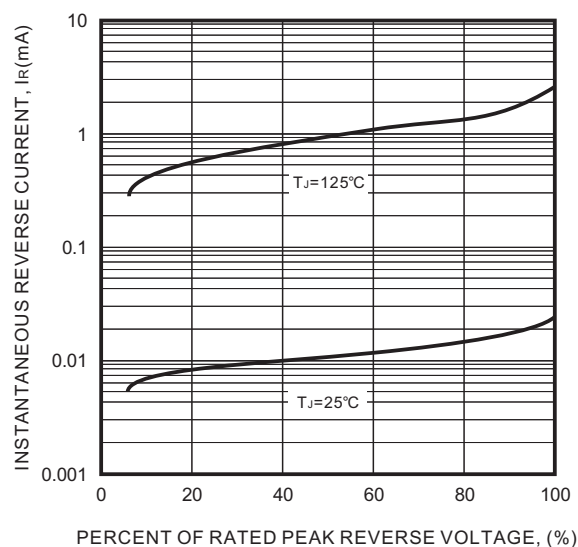
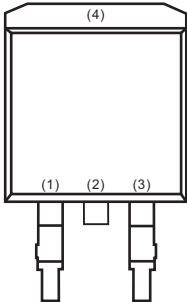
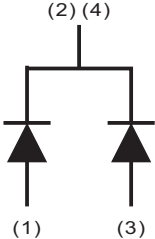


Fig.4 TYPICAL REVERSE CHARACTERISTICS

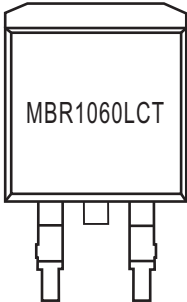


SKFM10L60CW-D2

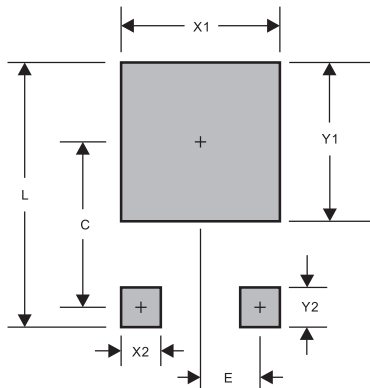
Pinning information

Pin	Simplified outline	Symbol
Pin1, 3 Anode Pin2, 4 Cathode		

Marking

Type number	Marking code
SKFM10L60CW-D2	

Suggested solder pad layout

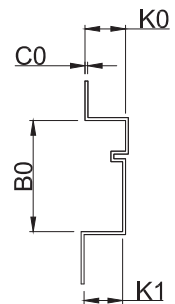
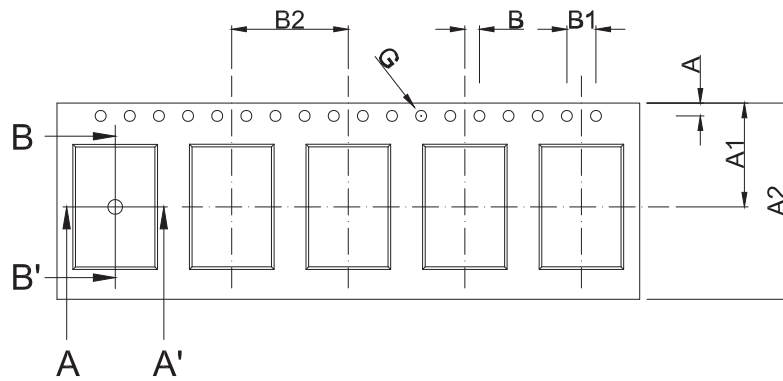


Package	D2PAK-1
C	0.374(9.50)
E	0.098(2.50)
L	0.665(16.90)
X1	0.425(10.80)
X2	0.071(1.80)
Y1	0.449(11.40)
Y2	0.138(3.50)

Dimensions in inches and (millimeters)

SKFM10L60CW-D2

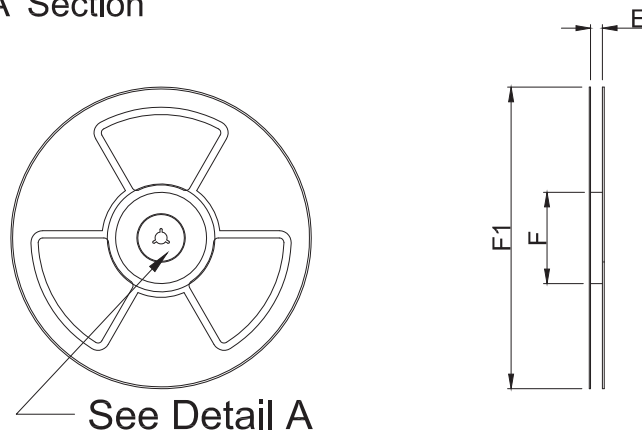
Packing information



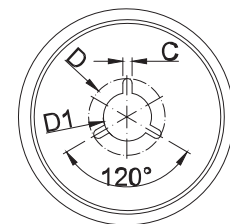
B-B' Section



A-A' Section



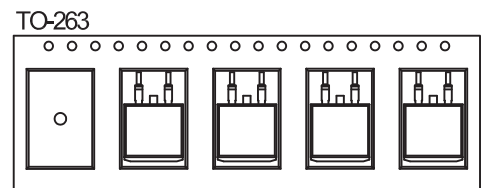
See Detail A



Detail A

SCALE 1: 2

Symbol	Dimensions in Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.65	1.85	0.065	0.073
A1	11.40	11.60	0.449	0.457
A2	24.00	24.30	0.945	0.957
B	1.90	2.10	0.075	0.083
B1	3.90	4.10	0.154	0.161
B2	15.90	16.10	0.626	0.634
C	2.00	3.00	0.079	0.118
C0	0.34	0.45	0.013	0.018
D	20.70	21.30	0.815	0.839
D1	13.05	13.35	0.514	0.526
E	24.00	26.00	0.945	1.024
F	99.00	101.00	3.898	3.976
F1	328.00	332.00	12.913	13.071
G	1.50	1.60	0.059	0.063
A0	10.70	10.90	0.421	0.429
B0	15.90	16.25	0.626	0.640
K0	5.00	5.30	0.197	0.209
K1	4.60	5.00	0.181	0.197



SKFM10L60CW-D2

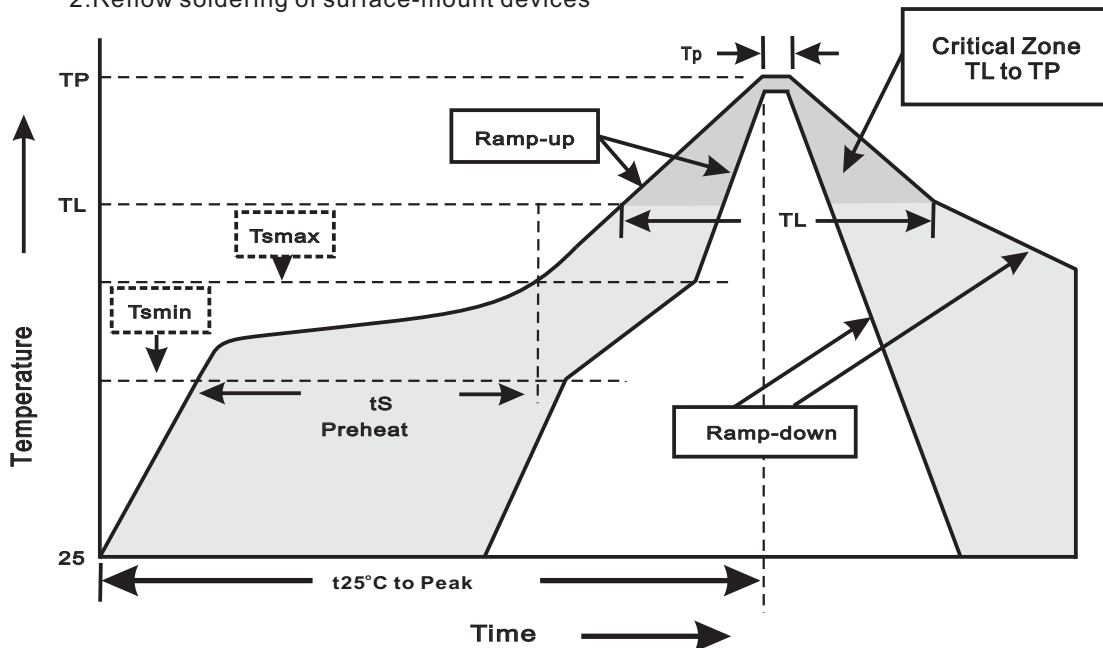
Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
D2PAK-1/ TO-263	13"	800	16.0	800	340 x 340 x 38	330	360 x 360 x 360	6,400	15.0

Suggested thermal profiles for soldering processes

1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%

2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T _L to T _P)	<3°C/sec
Preheat -Temperature Min(T _{smmin}) -Temperature Max(T _{smmax}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{smmax} to T _L -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T _L) -Time(t _L)	217°C 60~260sec
Peak Temperature(T _P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t _P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

SKFM10L60CW-D2

High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at $260 \pm 5^\circ\text{C}$ for $10 \pm 2\text{sec.}$ immerse body into solder $1/16" \pm 1/32"$	MIL-STD-750D METHOD-2031
2. Solderability	at $245 \pm 5^\circ\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_R = 80\%$ rate at $T_J = 125^\circ\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at $T_A = 25^\circ\text{C}$ for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	$T_A = 25^\circ\text{C}$, $I_F = I_O$ On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	$15P_{SIG}$ at $T_A = 121^\circ\text{C}$ for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to $+125^\circ\text{C}$ dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Forward Surge	8.3ms single half sine-wave , one surge.	MIL-STD-750D METHOD-4066-2
9. Humidity	at $T_A = 85^\circ\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 150°C for 1000 hrs.	MIL-STD-750D METHOD-1031