

SKFM10L60YW-D

List

List.....	1
Package outline.....	2
Features.....	2
Mechanical data.....	2
Maximum rating	2
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

SKFM10L60YW-D

10.0A Trench Schottky Barrier Rectifier 60V

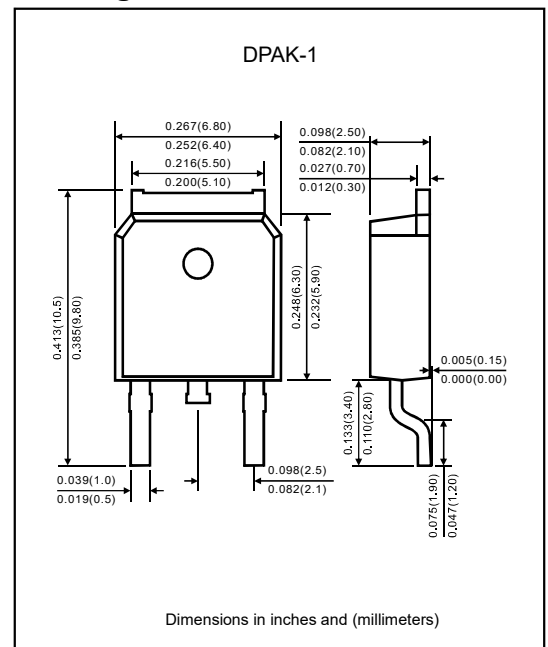
Features

- 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.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen free parts, ex. SKFM10L60YW-D-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant.
- Case : Molded plastic, DPAK-1 (TO-252).
- Terminals : Solder plated, solder able per MIL-STD-750, Method 2026.
- Polarity : Indicated by cathode band.
- Mounting Position : Any.

Package outline



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

Parameter	Symbol	Ratings	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 current at $T_C=110^\circ\text{C}$	$I_{(AV)}$	10	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	300	A
Typical thermal resistance	$R_{\theta JC}$	2.5	$^\circ\text{C/W}$
Operating junction temperature	T_J	+150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^\circ\text{C}$

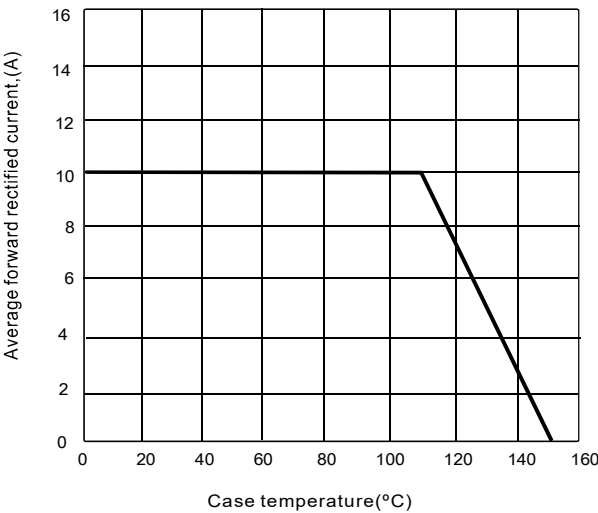
Electrical characteristics (At $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Maximum instantaneous forward voltage	V_F	$I_F=10\text{A}$ (Per diode)		0.45	0.52	V
Maximum DC reverse current at rated DC blocking voltage	I_R	$V_R=60\text{V}$ ($T_A=25^\circ\text{C}$)		80	200	μA
		$V_R=60\text{V}$ ($T_A=25^\circ\text{C}$)		5	50	mA

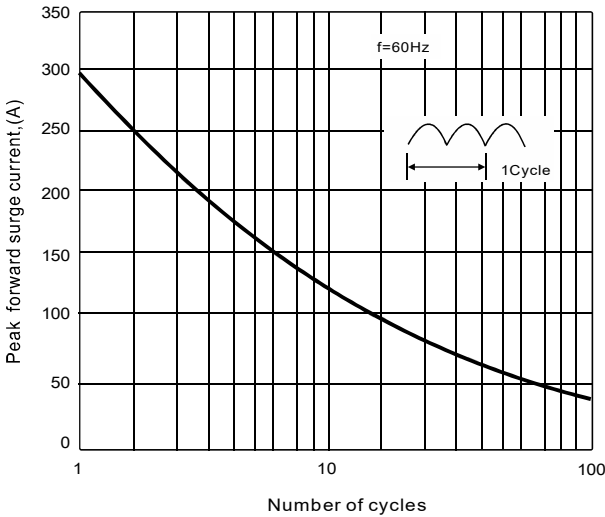
SKFM10L60YW-D

Rating and characteristic curves

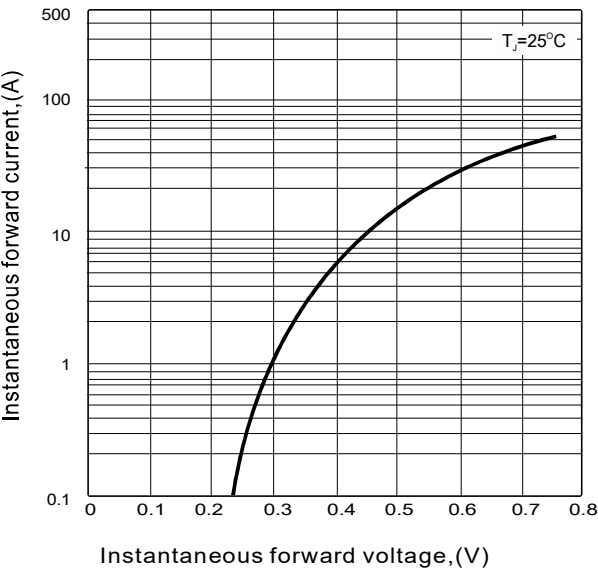
Derating curve output rectified current



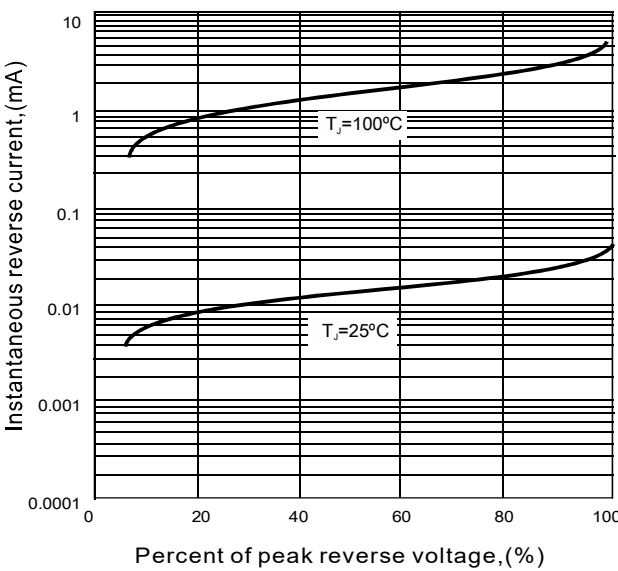
Maximum non-repetitive peak forward surge current



Typical forward voltage characteristics

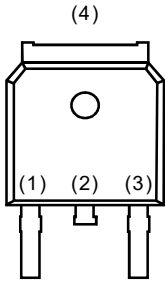
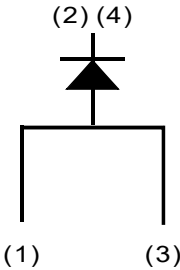


Typical reverse leakage characteristics



SKFM10L60YW-D

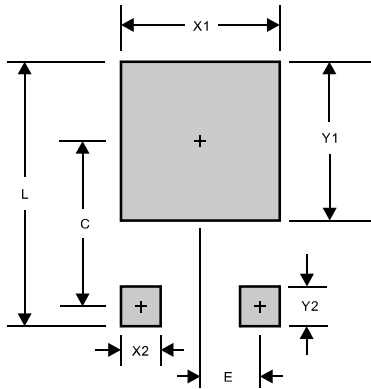
Pinning information

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

Marking

Type number	Marking code
SKFM10L60YW-D	MBR10T60LYS

Suggested solder pad layout

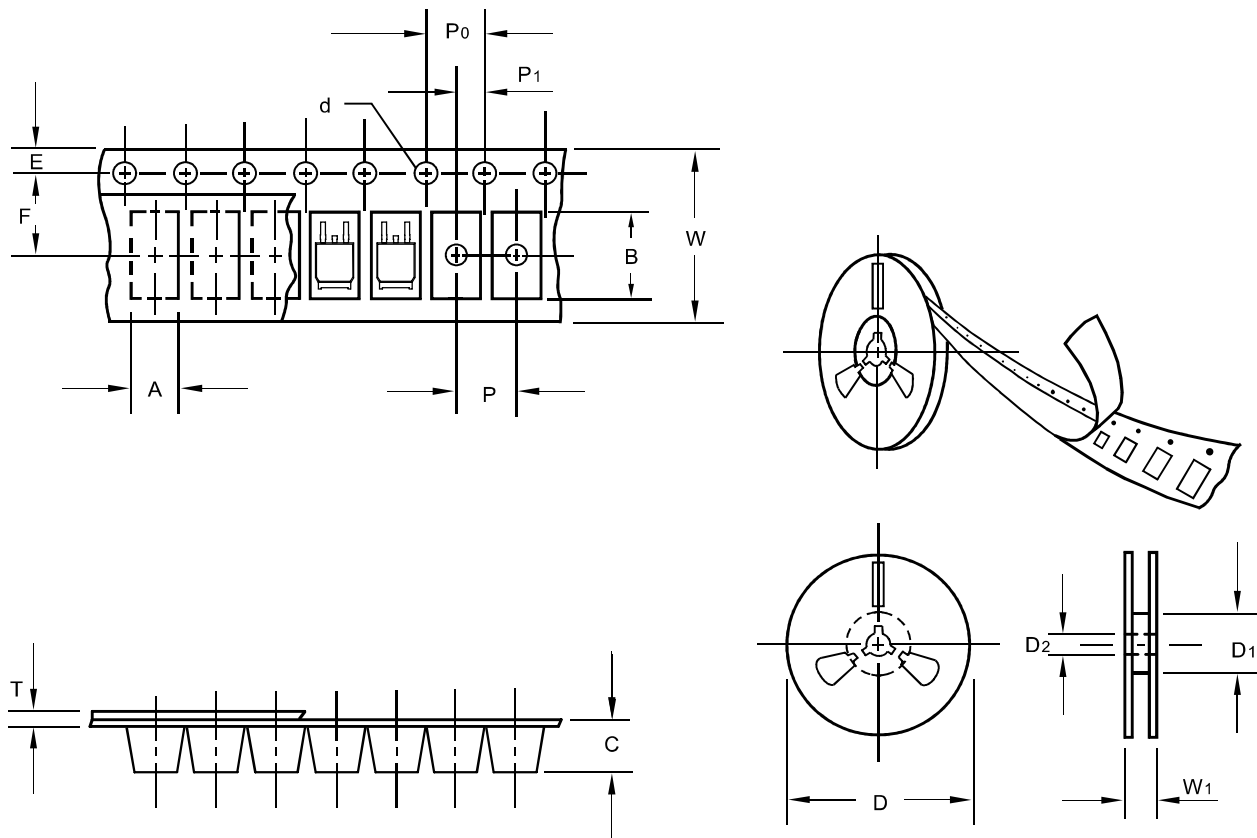


PACKAGE	DPAK-1
C	0.261(6.64)
E	0.091(2.30)
L	0.457(11.60)
X1	0.240(6.10)
X2	0.056(1.42)
Y1	0.298(7.57)
Y2	0.109(2.76)

Dimensions in inches and (millimeters)

SKFM10L60YW-D

Packing information



unit:mm

Item	Symbol	Tolerance	DPAK-1
Carrier width	A	0.1	6.90
Carrier length	B	0.1	10.50
Carrier depth	C	0.1	2.70
Sprocket hole	d	0.1	1.55
13" Reel outside diameter	D	2.0	330.00
13" Reel inner diameter	D ₁	min	50.00
7" Reel outside diameter	D	2.0	-
7" Reel inner diameter	D ₁	min	-
Feed hole diameter	D ₂	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	7.50
Punch hole pitch	P	0.1	8.00
Sprocket hole pitch	P ₀	0.1	4.00
Embossment center	P ₁	0.1	2.00
Overall tape thickness	T	0.1	0.30
Tape width	W	0.3	16.00
Reel width	W ₁	1.0	22.00

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

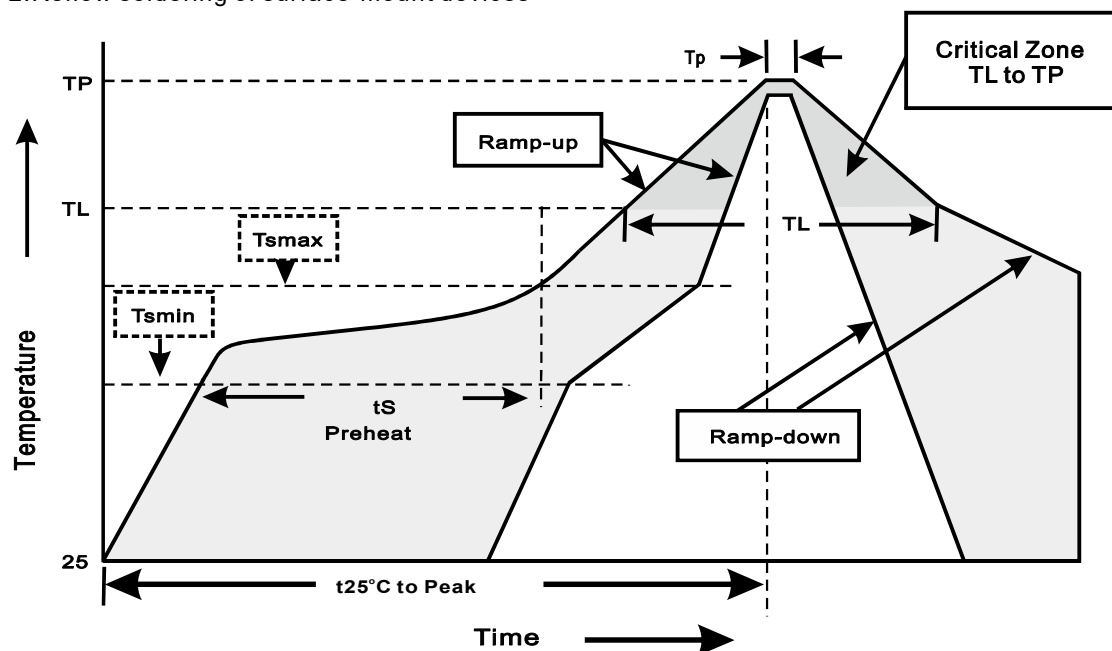
SKFM10L60YW-D

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)
DPAK-1/ TO-252	13"	2,500	8.0	5,000	335*335*38	330	350*350*225	40,000

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

SKFM10L60YW-D**High reliability test capabilities**

Item Test	Conditions	Reference
1. Solder Resistance	at $260\pm5^{\circ}\text{C}$ for $10\pm2\text{sec.}$ immerse body into solder $1/16''\pm1/32''$	MIL-STD-750D METHOD-2031
2. Solderability	at $245\pm5^{\circ}\text{C}$ 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