SKFM2040YW-D Thru SKFM20200YW-D

List

SKFM2040YW-D Thru SKFM20200YW-D

20.0A Schottky Barrier Rectifiers : 40V ~ 200V

Features

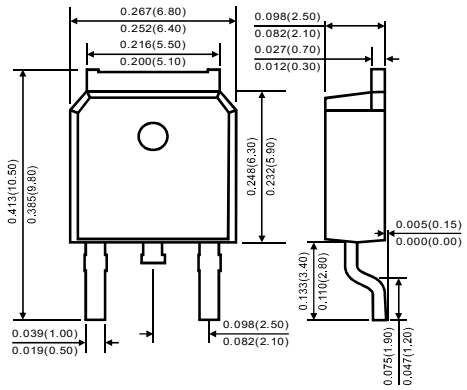
- Construction utilizes void-free molded plastic technique.
- High forward surge current capability.
- High temperature soldering guaranteed 260°C/10 seconds at terminals.
- Low reverse leakage.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen free parts, ex. SKFM2040YW-D-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant.
- Case : Molded plastic, TO-252 / DPAK-1.
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026.
- Mounting Position : Any.

Package outline

DPAK-1 (TO-252)



Dimensions in inches and (millimeters)

Maximum ratings and electrical characteristics (At TA=25°C, unless otherwise noted.)

Parameter	Symbol	SKFM2040 YW-D	SKFM2045 YW-D	SKFM2060 YW-D	SKFM20100 YW-D	SKFM20150 YW-D	SKFM20200 YW-D	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	40	45	60	100	150	200	V
Maximum RMS voltage	V_{RMS}	28	31.5	42	70	105	140	V
Maximum DC blocking voltage	V_{DC}	40	45	60	100	150	200	V
Maximum average forward rectified current at T_C=110ºC	$I_{(AV)}$	20						A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	200						A
Maximum instantaneous forward voltage per diode at 20A	V_F	0.55		0.70	0.85	0.95		V
Maximum DC reverse current (T_A=25°C)	I_R	0.5			0.05			mA
at rated DC blocking voltage (T_A=125°C)		50			10			
Typical thermal resistance	$R_{\theta JC}$	1.5						°C/W
Operating junction temperature	T_J	+150						°C
Storage temperature range	T_{STG}	-55 to +150						°C

Note : 1.Single phase half-wave 60Hz,resistive or inductive load, for capacitive load current derate by 20%.

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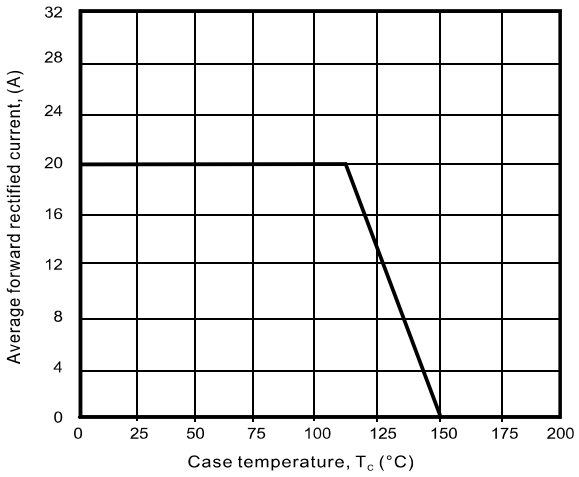
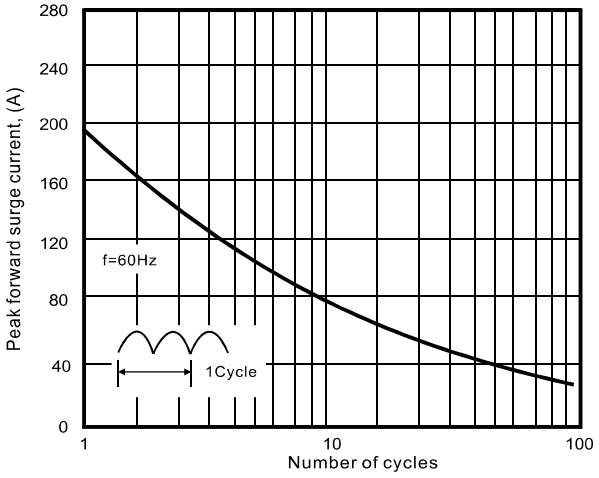
Rating and characteristic curves

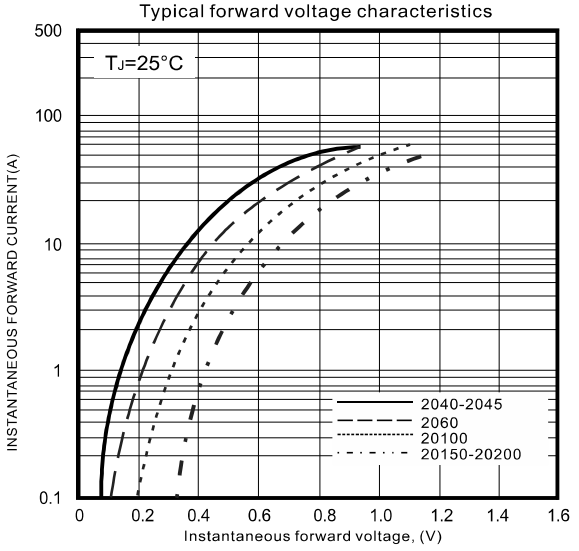
De-rating curve output rectified current



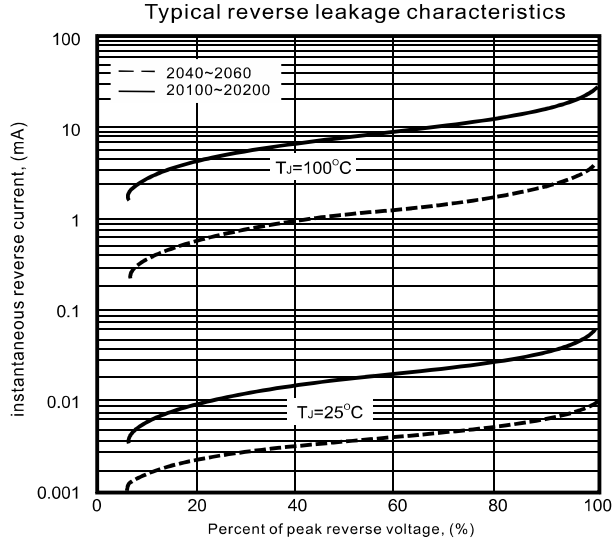
Maximum non-repetitive peak forward surge current



Typical forward voltage characteristics



Typical reverse leakage characteristics



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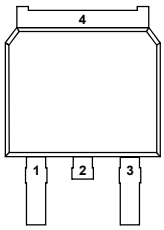
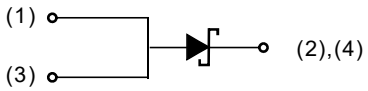
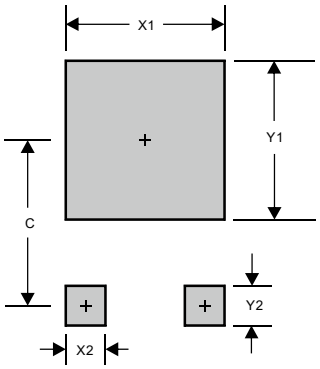
Pinning information

Pin	Simplified outline	Symbol
Pin 1, 3 Anode Pin 2, 4 Cathode		

Marking

Type number	Marking code
SKFM2040YW-D	MBR2040YS
SKFM2045YW-D	MBR2045YS
SKFM2060YW-D	MBR2060YS
SKFM20100YW-D	MBR20100YS
SKFM20150YW-D	MBR20150YS
SKFM20200YW-D	MBR20200YS

Suggested solder pad layout



Symbol	Dimension
C	0.261(6.64)
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)

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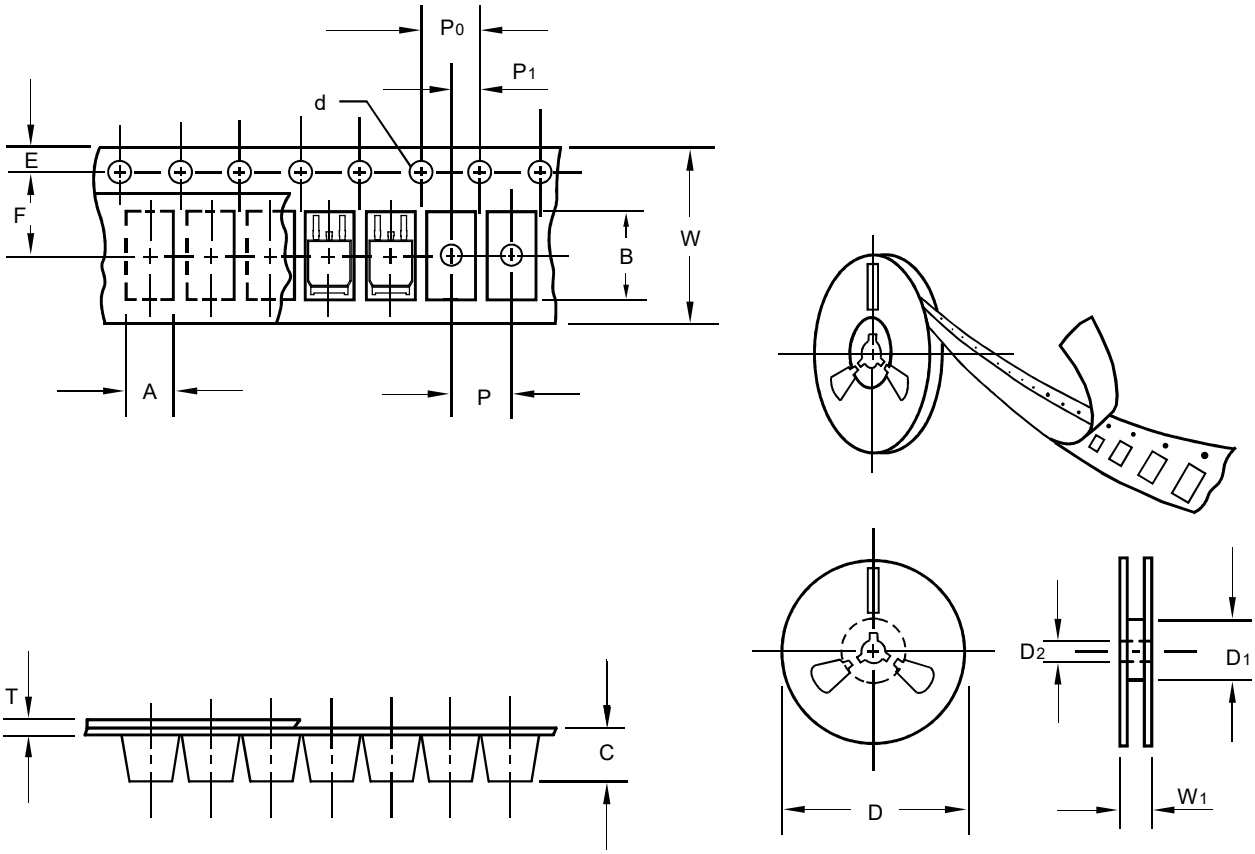
Packing information



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	13.50
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	3.0	13.30
Reel width	W_1	5.0	17.00

Note:Devices are packed in accor dance with EIA standar RS-481-A and specifications listed above.

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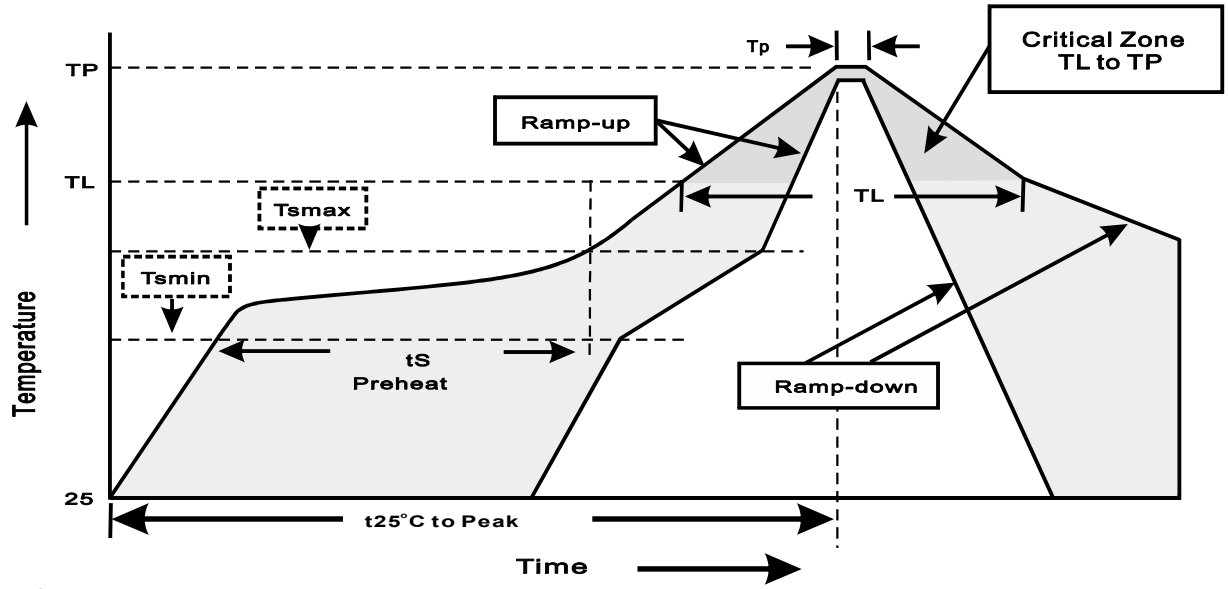
Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	REEL DIA, (m/m)
DPAK-1/ TO-252	13"	2,500	8.0	5,000	330

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(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(t_s)	 150°C 200°C 60~120sec
Tsmax 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	<3°C/sec
Time 25°C to Peak Temperature	<6minutes