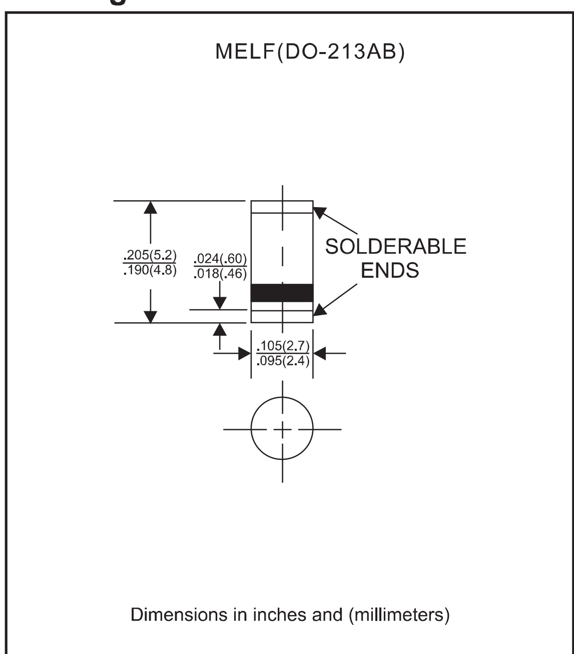
DL4001 THRU DL4007

1.0A Surface Mount General Purpose Rectifiers 50V-1000V

Features

- Low profile surface mounted application in order to optimize board space
- High current capability
- High surge capability
- Glass passivated chip junction
- Lead free parts meet RoHS requirements

Package outline



Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, MELF / DO-213AB
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any

Maximum ratings and Electrical characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.2	I_O			1.0	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	I_{FSM}			30	A
Reverse current	V_R = V_{RRM} T_J = 25°C	I_R			5.0	μA
	V_R = V_{RRM} T_J = 125°C				50	
Thermal resistance	Junction to ambient	$R_{\theta JA}$		50		°C/W
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C_J		15		pF
Storage temperature		T_{STG}	-65		+175	°C

SYMBOLS	V_{RRM} *1 (V)	V_{RMS} *2 (V)	V_R *3 (V)	V_F *4 (V)	Operating temperature T_J, (°C)
DL4001	50	35	50	1.10	-55 to +150
DL4002	100	70	100		
DL4003	200	140	200		
DL4004	400	280	400		
DL4005	600	420	600		
DL4006	800	560	800		
DL4007	1000	700	1000		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage@I_F=1.0A

Rating and characteristic curves

FIG.1-TYPICAL FORWARD CHARACTERISTICS

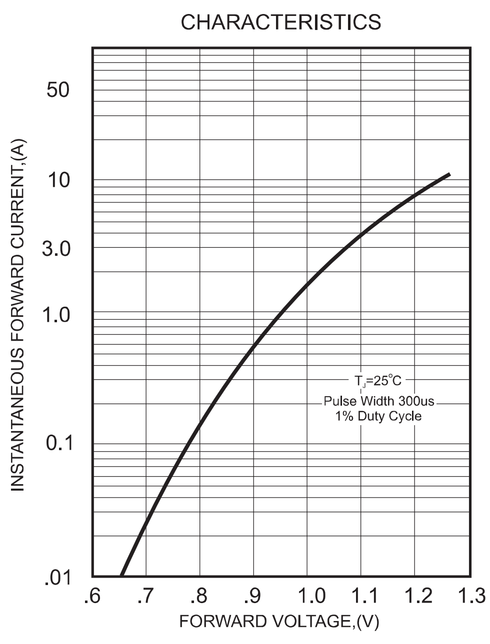


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

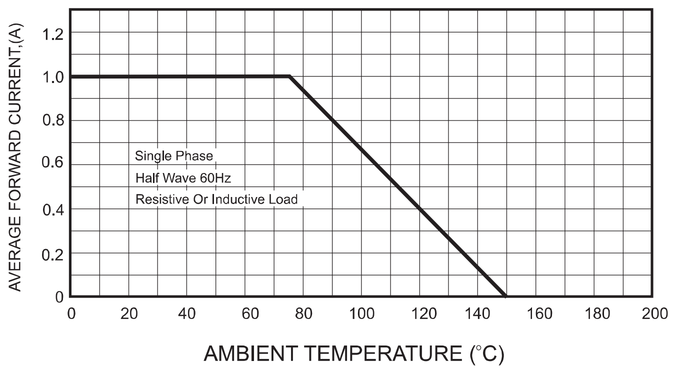


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

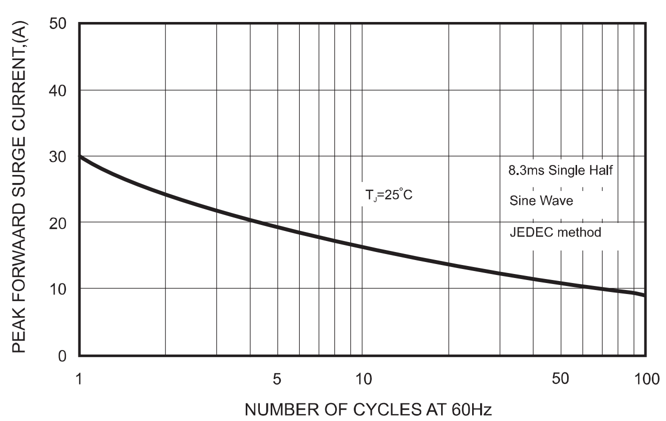


FIG.3 - TYPICAL REVERSE CHARACTERISTICS

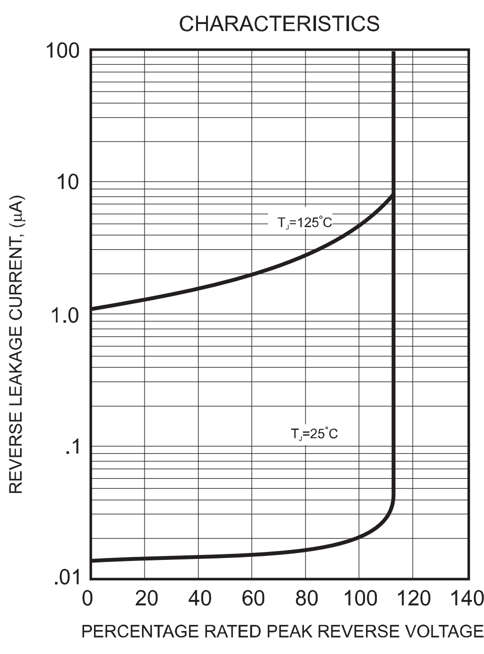
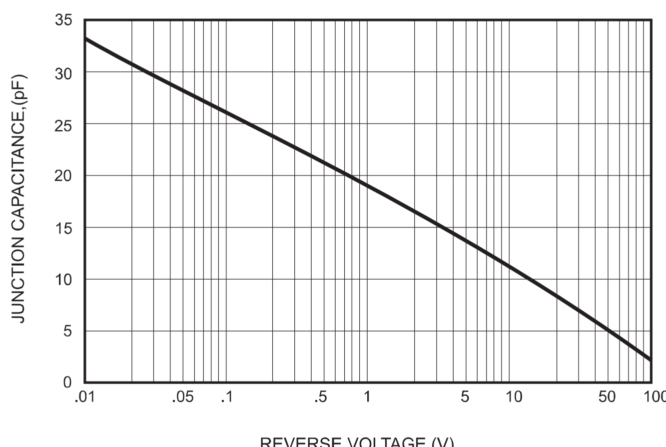


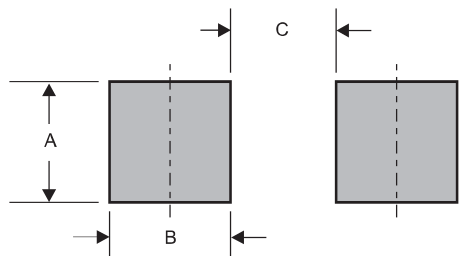
FIG.5-TYPICAL JUNCTION CAPACITANCE



Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode	1 2	1 2

Suggested solder pad layout

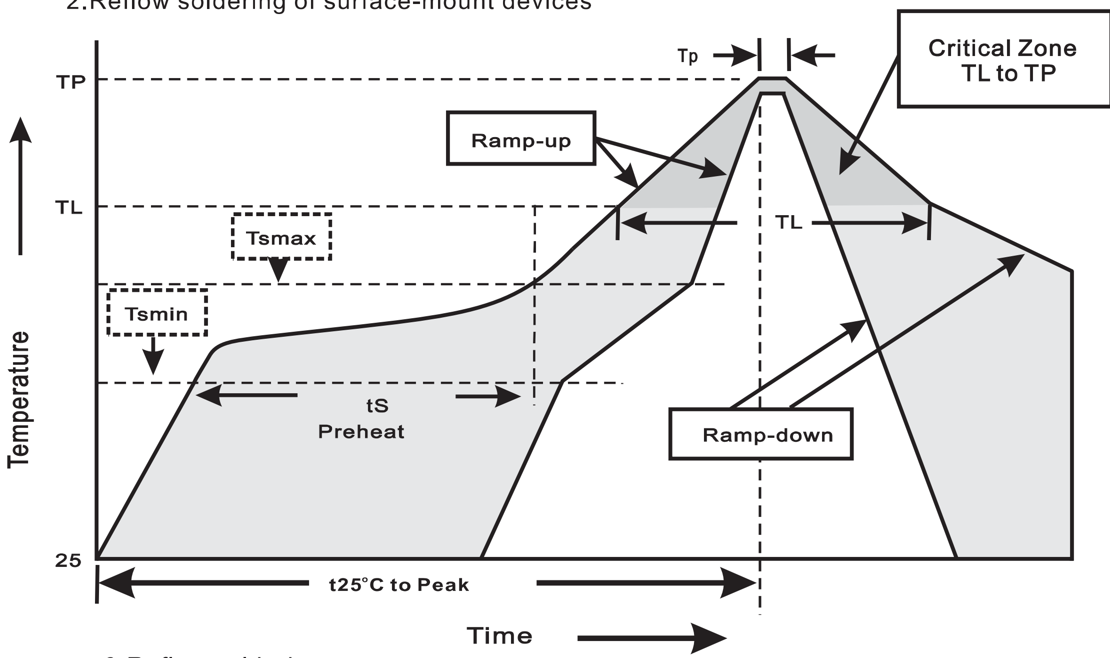


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
MELF	0.118 (3.00)	0.079 (2.00)	0.130 (3.30)

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	<6°C/sec
Time 25°C to Peak Temperature	<6minutes