

POWER SCHOTTKY RECTIFIERS

80A Pk, Up to 45V

USD4030S
USD4040S
USD4045S

2

FEATURES

- Economical Convenient TO-3P Package
- Insulated Mounting Hole
- Can Be Clip Mounted
- Mechanically Rugged
- Low Thermal Resistance
- Extremely Low V_f

DESCRIPTION

The USD4000S Series, in the economical, convenient TO-3P package, is specifically designed for operation in power switching circuits to frequencies in excess of 100kHz. The very low forward voltage and low recovered charge translates to extremely high efficiency making them particularly suited for low voltage switching type power supplies.

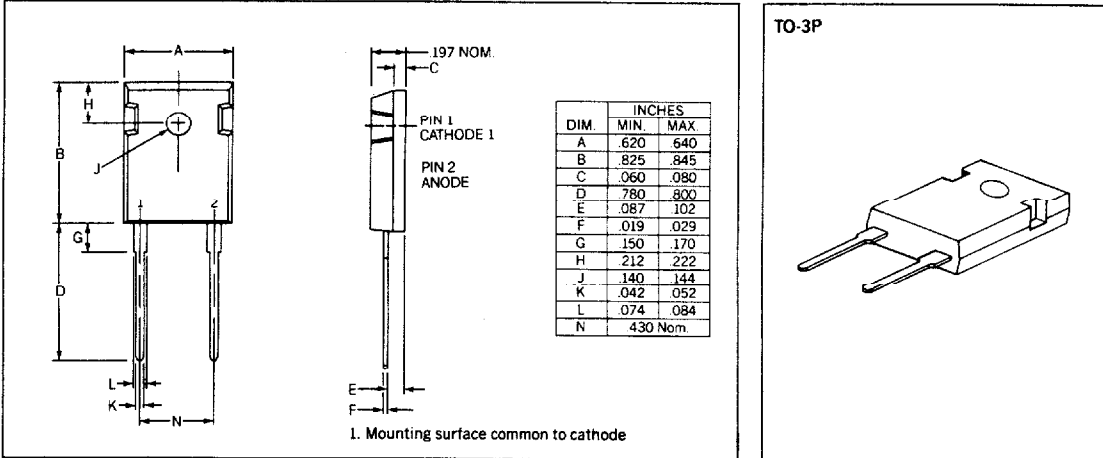
ABSOLUTE MAXIMUM RATINGS

	USD4030S	USD4040S	USD4045S
Working Peak Reverse Voltage	V_{HWM} 30V	40V	45V
D.C. Blocking Voltage	V_R 30V	40V	45V
Peak Repetitive Surge Voltage	$V_{RSM} @ I_{RM}$ 36V	48V	54V
Maximum Average D.C. Output Current @ $T_C = 115^\circ\text{C}$	$I_{F(AV)}$ 40V	40V	40V
Non-Repetitive Sinusoidal Surge Current, 8.3ms	I_{FSM} 400A	400A	400A
Peak Reverse Transient Current	I_{RM} 2A	2A	2A
Thermal Resistance Junction to Case	$R_{\theta J-C}$ 1.4°C/W	1.4°C/W	1.4°C/W
Thermal Resistance Junction to Ambient	$R_{\theta J-A}$ 40°C/W	40°C/W	40°C/W
Operating and Storage Temperature Range	T_{OP}, T_{STG} -55°C to +150°C	-55°C to +150°C	-55°C to +150°C

ELECTRICAL SPECIFICATIONS

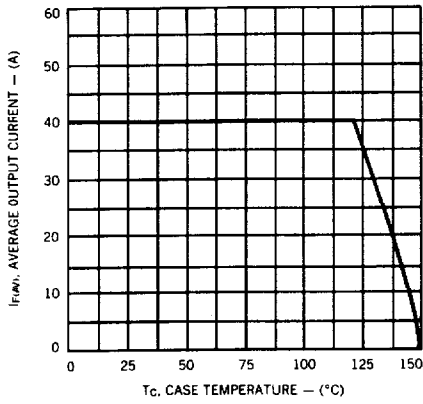
Type	V_{RWM}	Maximum Forward Voltage (V_F)		Maximum Reverse Current (I_R) @ V_{HWM}		Maximum Capacitance C_T at $V_R = 5.0V$	Voltage Rate of Change (dv/dt)
		$T_J = 25^\circ\text{C}$	$T_J = 125^\circ\text{C}$	$T_J = 25^\circ\text{C}$	$T_J = 125^\circ\text{C}$		
USD4030S	30V	.75 @ 40A	.70 @ 40A	10mA	50mA	2000pF	1000V/ μS
USD4040S	40V	.975 @ 80A	.90 @ 80A				
USD4045S	45V						

MECHANICAL SPECIFICATIONS

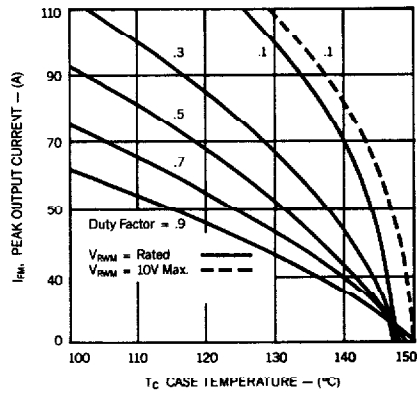


Microsemi Corp.
Watertown
The diode experts

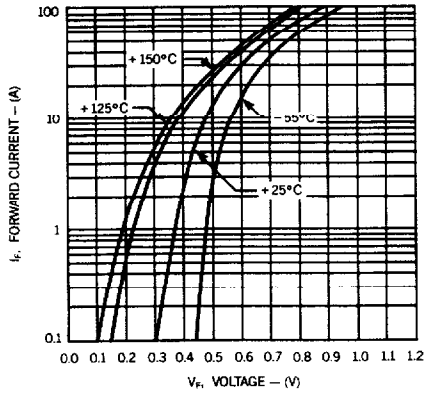
Average Output Current vs Case Temperature



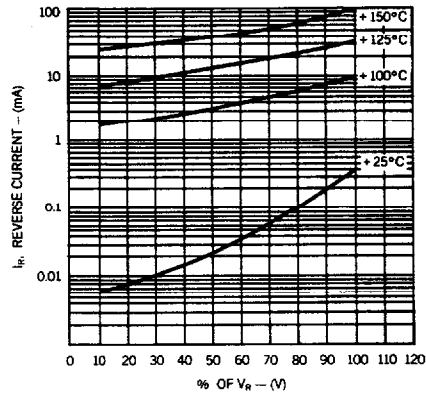
Peak Output Current vs Case Temperature



Typical Forward Current vs Forward Voltage



Typical Reverse Current vs Voltage



Thermal Impedance vs Pulse Width

