

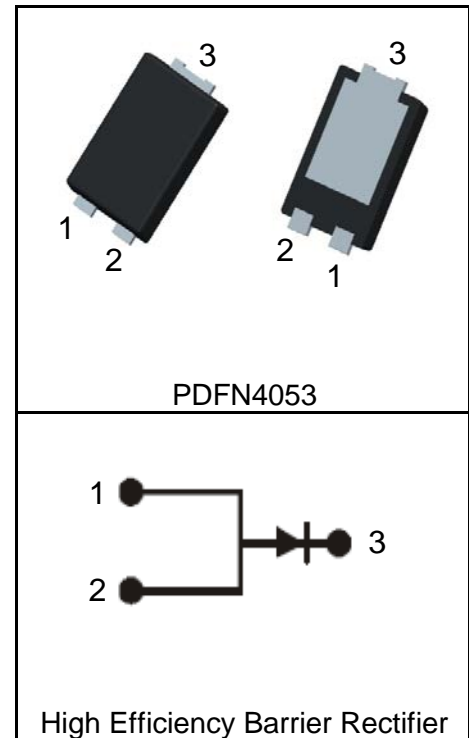
Features

- $V_{RRM} = 50V$
 $I_{F(AV)} = 10A$
- HEBR[®] Technology
- Ultra-Low Forward Voltage Drop
- Low Power Loss and High Efficiency
- High Surge Capability
- Low Leakage Current
- Lead Free and Green Devices Available

Applications

- Rectifiers in SMPS
- Free Wheeling Diode
- DC-DC Converters

Pin Description



Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit
Common Ratings ($T_A = 25^\circ C$ Unless Otherwise Noted)			
$V_{RRM}^{①}$	Maximum Repetitive Reverse Voltage	50	V
$V_R^{①}$	Maximum DC Reverse Voltage	50	V
$V_{R(RMS)}^{①}$	RMS Reverse Voltage	35	V
$I_{F(AV)}$	Average Rectified Forward Current, $T_C = 130^\circ C$	10	A
I_{FSM}	Peak Forward Surge Current, 8.3ms Half Sine Wave	250	A
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ C$
Mounted on Large Heat Sink			
$R_{\theta JC}$	Thermal Resistance-Junction to Case	2.1	$^\circ C/W$
$R_{\theta JA}^{②}$	Thermal Resistance-Junction to Ambient	35	$^\circ C/W$

Electrical Characteristics ($T_A=25^\circ\text{C}$ Unless Otherwise Noted)

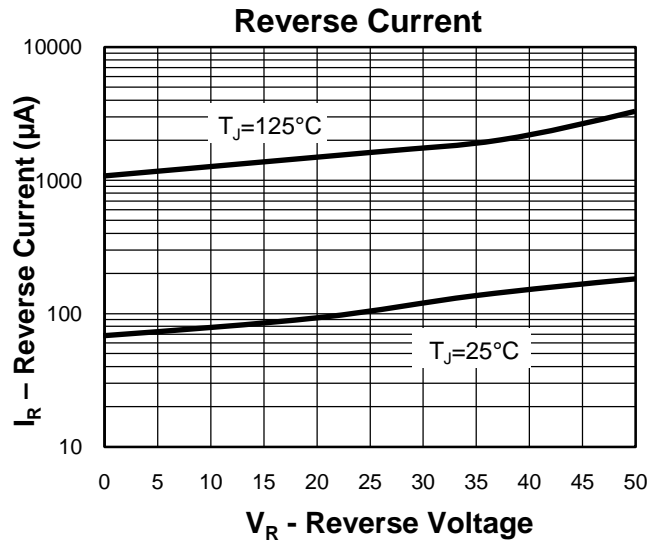
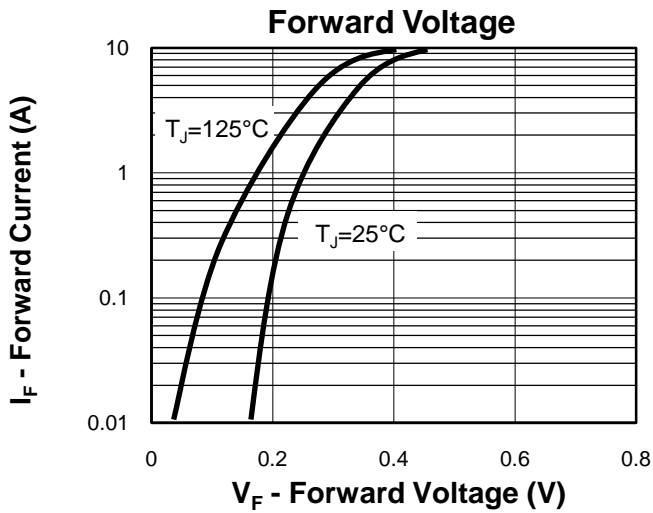
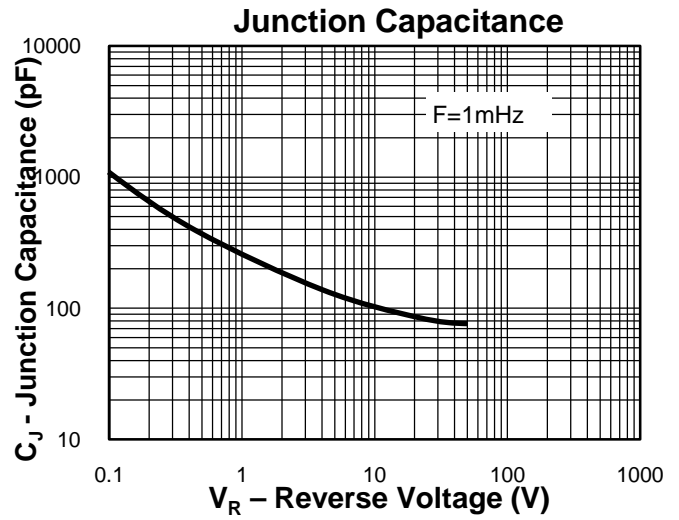
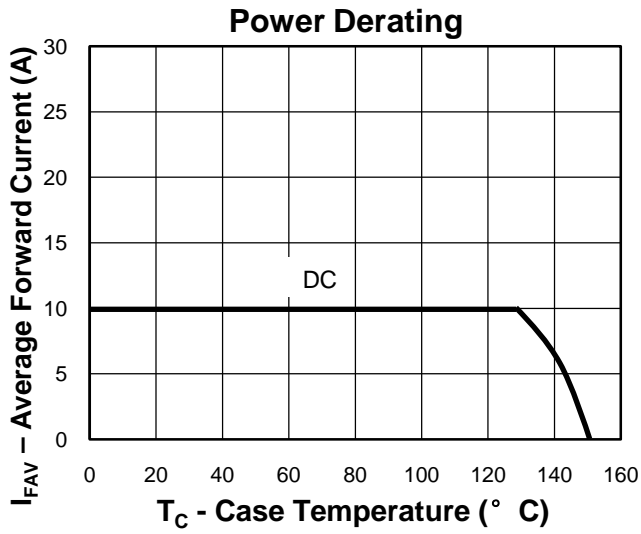
Symbol	Parameter	Test Condition	RUS5010M6			Unit
			Min.	Typ.	Max.	
Static Characteristics						
$V_{(BR)R}^{\textcircled{1}}$	Reverse Breakdown Voltage	$I_R=300\mu\text{A}$	50			V
$I_R^{\textcircled{3}}$	Reverse Leakage Current	$V_R=50\text{V}, T_C=25^\circ\text{C}$			300	μA
		$V_R=50\text{V}, T_C=125^\circ\text{C}$			5	mA
$V_F^{\textcircled{3}}$	Forward Voltage Drop	$I_F=2\text{A}, T_C=25^\circ\text{C}$		0.3	0.32	V
		$I_F=5\text{A}, T_C=25^\circ\text{C}$		0.32	0.38	V
		$I_F=10\text{A}, T_C=25^\circ\text{C}$		0.41	0.45	V
		$I_F=10\text{A}, T_C=125^\circ\text{C}$		0.37	0.42	V

- Notes:
- ① For $T_A > 25^\circ\text{C}$ the derating of V_R and I_F has to be considered.
 - ② Polymide PCB, 2oz. Copper. Cathode pad dimensions 18.8mm x 14.4mm. Anode pad dimensions 5.6mm x 14.4mm.
 - ③ Pulse test, pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

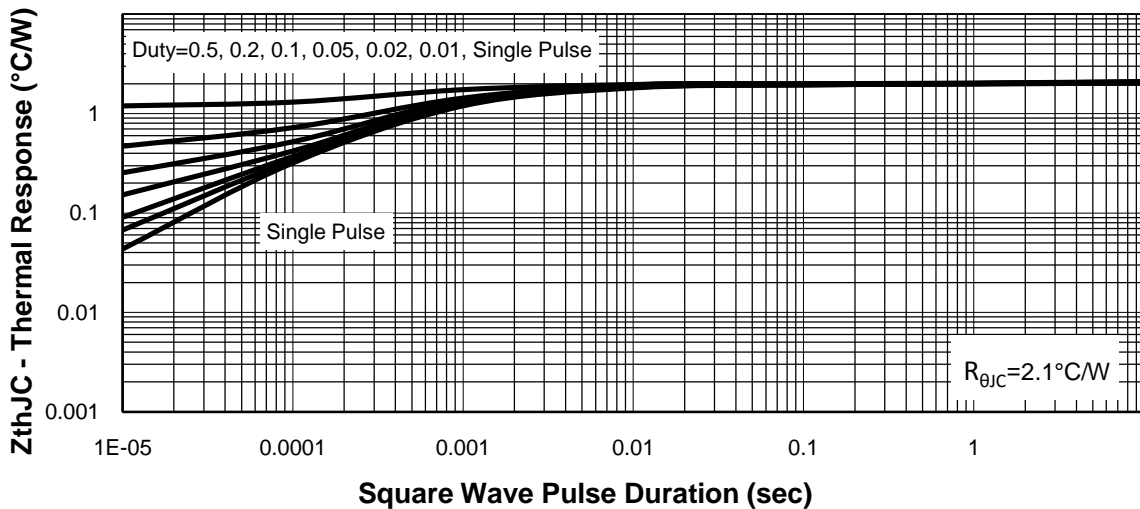
Ordering and Marking Information

Device	Marking	Package	Packaging	Quantity	Reel Size	Tape width
RUS5010M6	S5010	PDFN4053	Tape&Reel	3000	13"	16mm

Typical Characteristics

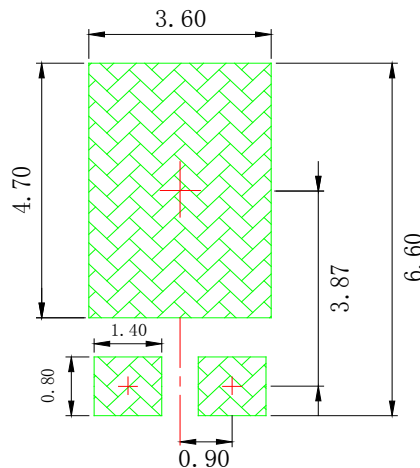
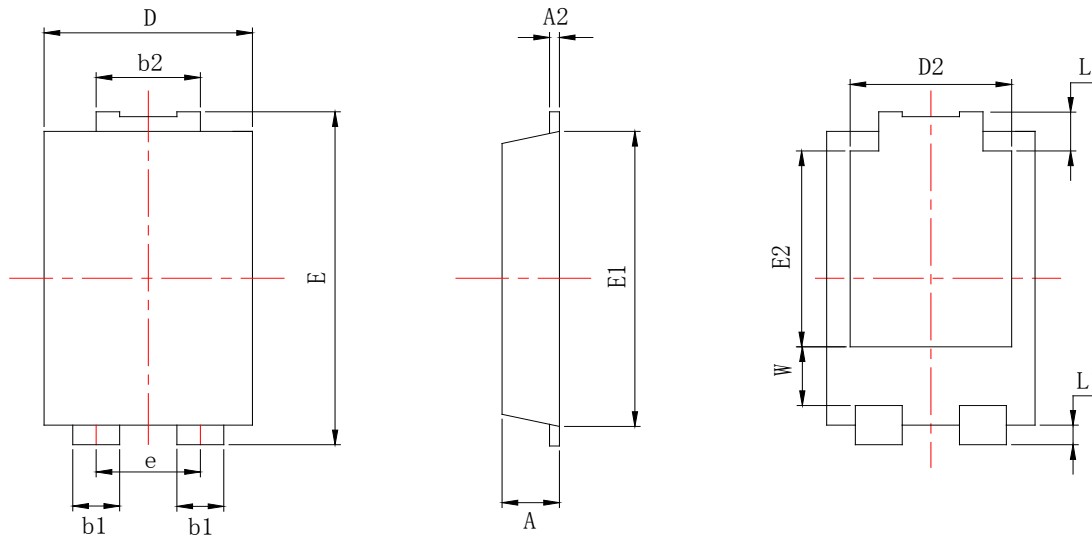


Thermal Transient Impedance



Package Information

PDFN4053



Land Pattern
(Only for Reference)

SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.10	1.20	1.30	0.043	0.047	0.051
A2	0.20	0.25	0.30	0.008	0.010	0.012
b1	0.80	0.90	1.00	0.031	0.035	0.039
b2	1.70	1.80	1.90	0.067	0.071	0.075
D	3.85	3.95	4.05	0.152	0.156	0.159
D2	*	3.05 TYP	*	*	0.12 TYP	*
E	6.30	6.40	6.50	0.248	0.252	0.256
e	*	1.84 TYP	*	*	0.072 TYP	*
E1	5.20	5.30	5.40	0.205	0.209	0.213
E2	3.40	3.50	3.60	0.134	0.138	0.142
L	0.65	0.80	0.95	0.026	0.031	0.037
L1	0.50	0.60	0.70	0.020	0.024	0.028
W	1.10	1.30	1.50	0.043	0.051	0.059

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