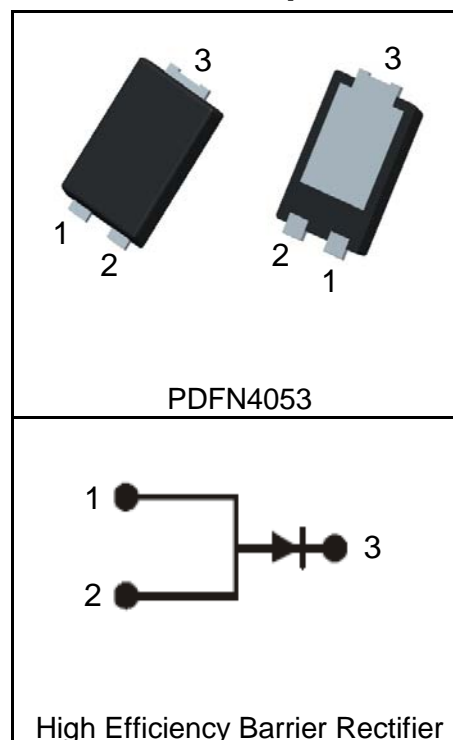


**Features**

- $V_{RRM} = 50V$   
 $I_{F(AV)} = 5A$
- HEBR<sup>®</sup> 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
<b>Common Ratings</b> ( $T_A = 25^\circ C$ 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, $T_C = 130^\circ C$	5	A
$I_{FSM}$	Peak Forward Surge Current, 8.3ms Half Sine Wave	180	A
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ C$
$T_J$	Operating Junction Temperature Range	-55 to 150	$^\circ C$
<b>Mounted on Large Heat Sink</b>			
$R_{\theta JC}$	Thermal Resistance-Junction to Case	3	$^\circ C/W$
$R_{\theta JA}^{②}$	Thermal Resistance-Junction to Ambient	35	$^\circ C/W$

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

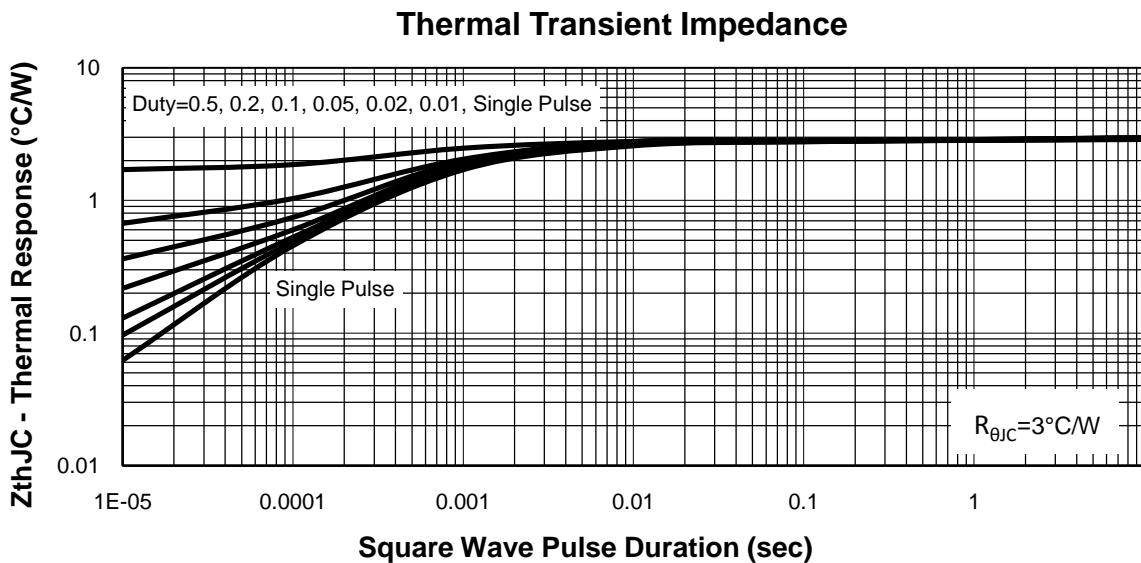
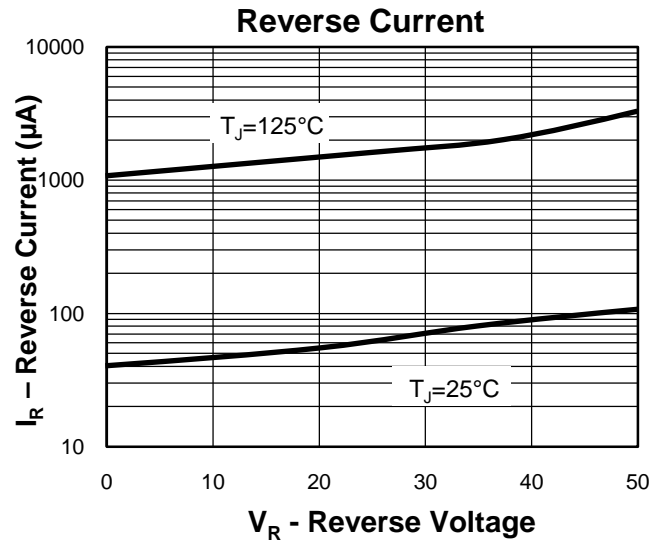
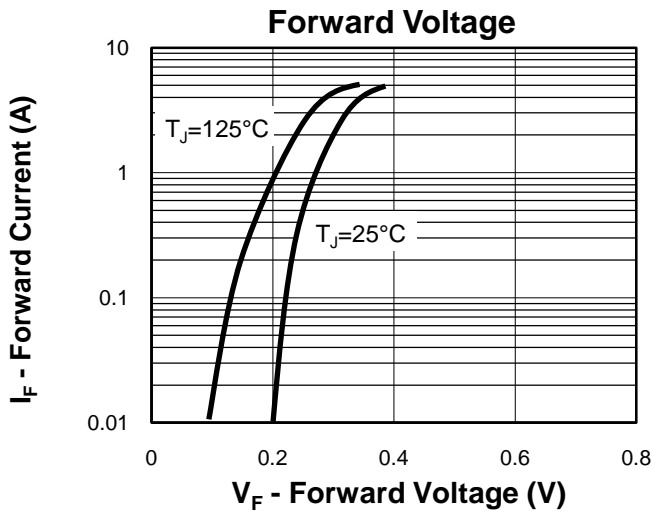
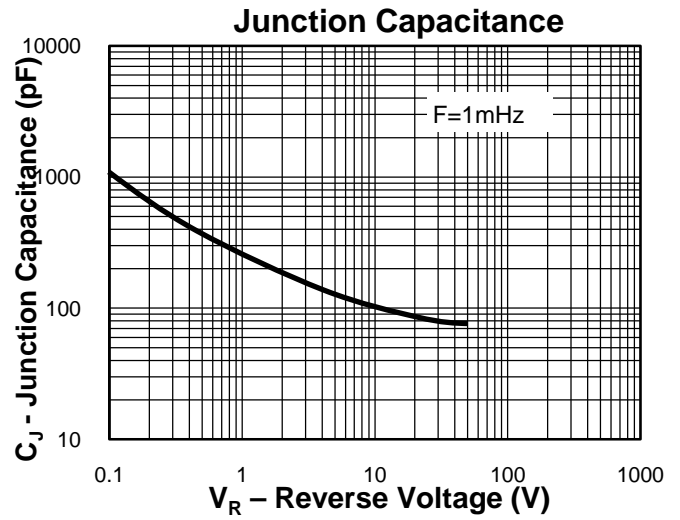
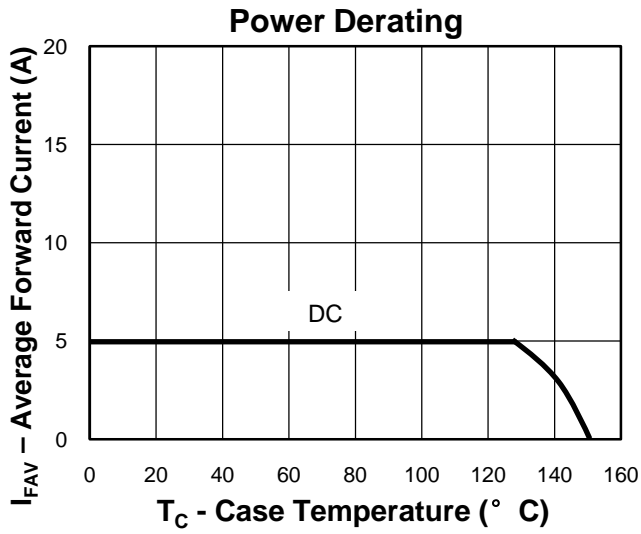
Symbol	Parameter	Test Condition	RUS505M6			Unit
			Min.	Typ.	Max.	
<b>Static Characteristics</b>						
$V_{(BR)R}^{\textcircled{1}}$	Reverse Breakdown Voltage	$I_R=300\mu\text{A}$	50			V
$I_R^{\textcircled{2}}$	Reverse Leakage Current	$V_R=50\text{V}, T_C=25^{\circ}\text{C}$		100	300	$\mu\text{A}$
		$V_R=50\text{V}, T_C=125^{\circ}\text{C}$			5	mA
$V_F^{\textcircled{3}}$	Forward Voltage Drop	$I_F=2\text{A}, T_C=25^{\circ}\text{C}$		0.33	0.35	V
		$I_F=5\text{A}, T_C=25^{\circ}\text{C}$		0.38	0.42	V
		$I_F=5\text{A}, T_C=125^{\circ}\text{C}$		0.34	0.39	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**

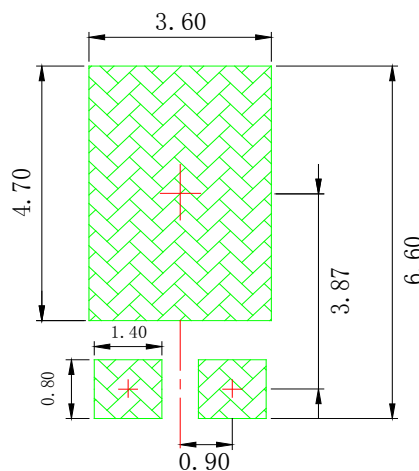
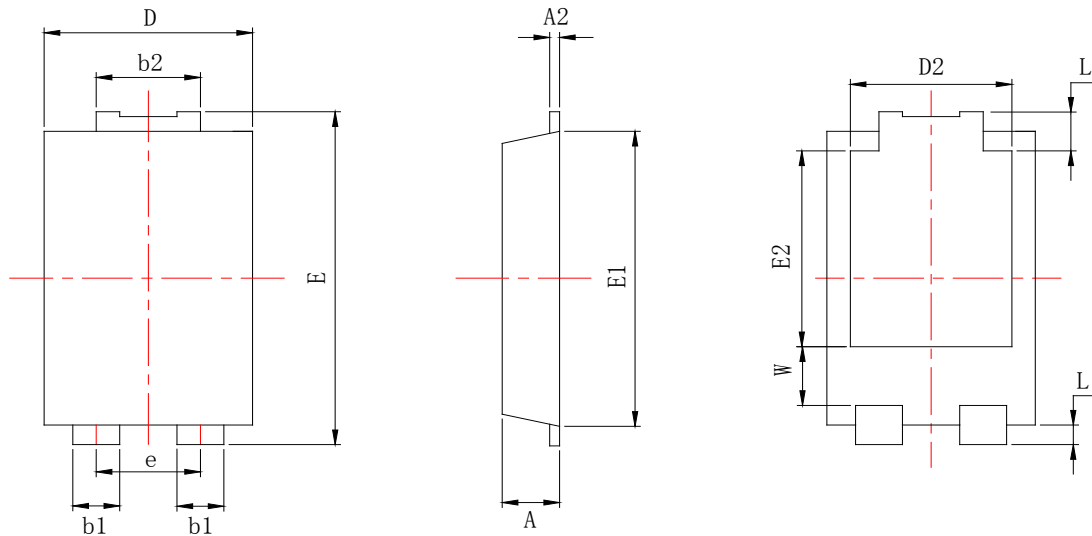
<b>Device</b>	<b>Marking</b>	<b>Package</b>	<b>Packaging</b>	<b>Quantity</b>	<b>Reel Size</b>	<b>Tape width</b>
RUS505M6	S505	PDFN4053	Tape&Reel	3000	13"	16mm

**Typical Characteristics**



**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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