

## 1. Description

These diodes are optimized to less losses and EMI/RFI in high frequency power conditioning system. The soft recovery character of the diodes offers buffer in most applications. These devices are suited for power converters and other applications where the switching losses are not significant portion of the total losses.

## 2. Features

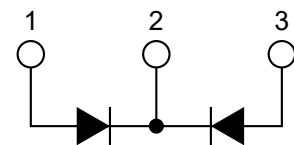
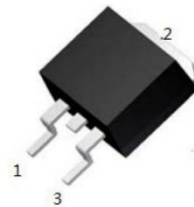
- Ultrafast Recovery
- 175°C operating junction temperature
- High frequency operation
- Low IR value
- High surge capacity
- Epitaxial chip construction

## 3. Applications

- Switched mode power supply
- UPS
- Free wheeling diode, Snubber diode

## 4. Pinning Information

Product Summary	
$V_R$	400V
$I_{F(AV)}$	2×8A
$t_{rr}$	30ns



TO-263



## 5. Absolute Maximum Ratings

Parameter	Symbol	Test Conditions	Value	Units
Repetitive peak reverse voltage	$V_{RRM}$		400	V
Blocking voltage	$V_R$		400	V
Continuous forward current <sup>1</sup>	$I_{F(AV)}$	$T_A=110^{\circ}\text{C}$	16	A
Single pulse forward current <sup>2</sup>	$I_{FSM}$	$T_A=25^{\circ}\text{C}$	130	A
Maximum repetitive forward current	$I_{FRM}$	Square wave, 20kHz	30	A
Operating junction	$T_J$		175	$^{\circ}\text{C}$
Storage temperatures	$T_{STG}$		-55 to 175	$^{\circ}\text{C}$

Note: 1.  $\delta=0.5$ , square wave

2.  $t_p=10\text{ms}$  sinusoidal

When the diodes 1 and 2 are used simultaneously:  $\Delta T_{J(\text{diode}1)} = P_{(\text{diode}1)} \times R_{th(j-c)} (\text{per diode}) + P_{(\text{diode}2)} \times R_{th(c)}$

## 6. Electrical Characteristics ( $T_A = 25^{\circ}\text{C}$ Unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Breakdown voltage	$V_{BR}$	$I_R=100\mu\text{A}$	400			V
Forward voltage	$V_F^3$	$I_F=8\text{A}$		1.2	1.45	V
		$I_F=8\text{A}, T_J=125^{\circ}\text{C}$		1.1	1.35	V
Reverse leakage current	$I_R^4$	$V_R=V_{RRM}$			20	$\mu\text{A}$
		$T_J=150^{\circ}\text{C}, V_R=400\text{V}$			200	$\mu\text{A}$
Reverse recovery time	$t_{rr}$	$I_F=0.5\text{A}, I_R=1\text{A}, I_{RR}=0.25\text{A}$			30	ns
		$I_F=1\text{A}, V_R=30\text{V}, di/dt = 200\text{A}/\mu\text{s}$		21	30	ns

Notes:

3. Pulse test:  $t_p=380\mu\text{s}$ ,  $\delta < 2\%$

4. Pulse test:  $t_p=5\text{ms}$ ,  $\delta < 2\%$

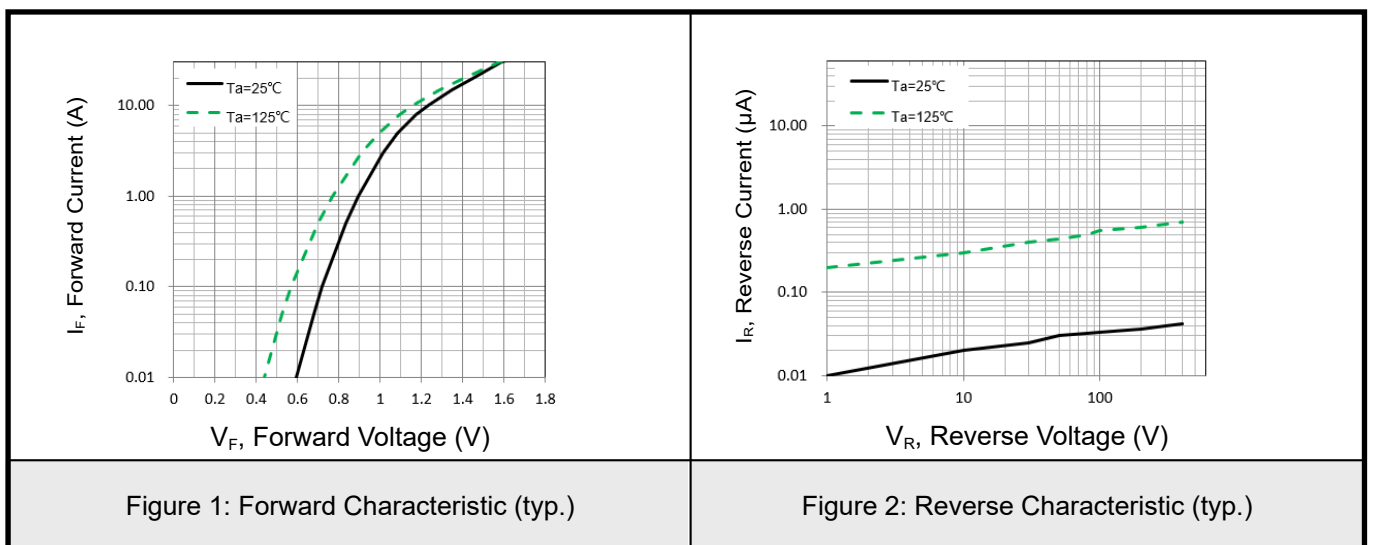
To evaluate the conduction losses, use the following equation:  $P = 0.83 \times I_{F(AV)} + 0.034 \times I_F^2(\text{RMS})$



## 7. Thermal Characteristics

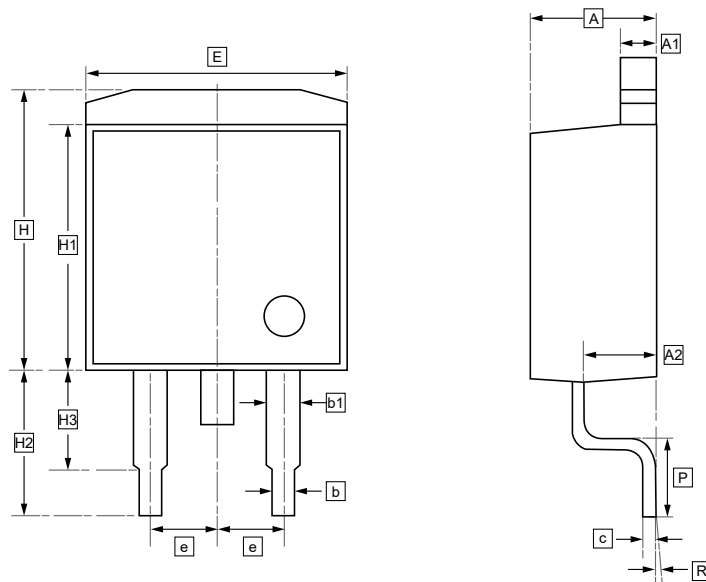
Parameter	Symbol	Typ	Max	Units
Junction-to-Case	$R_{thJC}$		3	°C/W

## 8. Typical Characteristics





## 9.TO-263 Package Outline Dimensions



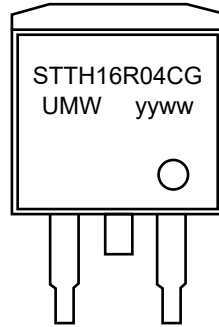
### DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	b1	c	e	E	H	H1	H2	H3
Min	4.50	1.17	2.40	0.60	0.95	0.26	2.34	9.70	9.80	8.50	5.05	3.60
Max	4.90	1.37	2.80	1.00	1.35	0.50	2.74	10.10	10.20	8.90	5.45	4.00

Symbol	R	P
Min	0°	2.55
Max	6°	2.95



## 10. Ordering Information



yy: Year Code  
ww: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW STTH16R04CG-TR	TO-263	800	Tape and reel



## **11.Disclaimer**

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