#### Features

 $V_{\text{DSS}} = 100 \text{V} / \text{V}_{\text{GSS}} = \pm 20 \text{V} / \text{I}_{\text{D}} = 3.5 \text{A} \\ R_{\text{DS}(\text{ON})} = 105 \text{m}\Omega(\text{Max.}) @ \text{V}_{\text{GS}} = 10 \text{V} \\ R_{\text{DS}(\text{ON})} = 175 \text{m}\Omega(\text{Max.}) @ \text{V}_{\text{GS}} = 4.5 \text{V} \\ \text{ESD protect} \\ \text{Reliable and Rugged} \\ High Density Cell Design For Ultra Low \\ On-Resistance \\$ 

### Applications

Synchronous Rectification Power Management in Inverter System

# Switching Time Test Circuit and Waveforms



## **Pin Description**



#### Marking and pin Assignment





SOP-8 top view

#### Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
JTM4886	JTM4886E	SOP-8	-	-	-

Symbol	Parameter	Typical	Unit	
VDSS	Drain-Source Voltage		100	V
V <sub>GSS</sub>	Gate –Source Voltage		±20	V
Idi	Continuous Drain Current	Tc=70 °C	2.8	Α
	Continuous Drain Current		3.5	Α
IDM1	300us Pulsed Drain Current Tested	Tc=25 ℃	14	А
Is1	Diode Continuous Forward Current		3	Α
Eas2	Avalanche Energy, Single Plused(L=0.3mH)		30	mJ
TJ	Operating Junction Temperature	150	C	
TSTG	Storage Temperature Range		-55 ~ 150	C

#### Absolute Maximum Ratings (TA=25 °C unless otherwise noted)

Note: 1: Surface Mounted on  $1in_2$  pad area,  $t \leq 10$  sec..

2: UIS tested and pluse width limited by maximum junction temperature 150  $^{\circ}$ C (initial temperature T<sub>J</sub>=25  $^{\circ}$ C).

#### **Electrical Characteristics** (TA=25 °C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Тур	Max.	Unit		
Static Characteristics								
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	Vgs=0V,Id=250uA	100			V		
Ingg	Zero Gate Voltage Drain Current	$V_{DS}=-80V, V_{GS}=0V$			1	11 A		
IDSS		TJ=85 °C			30	uA		
V <sub>GS(th)</sub>	Gate Threshold Voltage	VDS=VGS,ID=-250uA	1.5	2	2.5	V		
Igss	Gate Leakage Current	$V_{GS}=\pm 16V, V_{DS}=0V$			±10	nA		
Draw	Drain-Source On-Resistance	Vgs=10V, Id=3.5A		85	105	5 mO		
KDS(on)1		Vgs=4.5V, Id=2A		135	175	11122		
<b>Diode Chara</b>	Diode Characteristics							
V <sub>SD1</sub>	Diode Forward Voltage	Isd=3A,Vgs=0V	0.6	0.8	1.1	V		
trr	Reverse Recovery Time	Isd=3.5A,		44		ns		
Qrr	Reverse Recovery Charge	dIsd/dt=100A/us		80		nC		
Dynamic Ch	naracteristics <sup>2</sup>							
Ciss	Input Capacitance	$V_{CS} = 0V V_{DS} = 30V$		940		pF		
Coss	Output Capacitance	Frequency - 1MHz		80				
Crss	Reverse Transfer Capacitance	1 Tequency – TWITZ		50				
td(on)	Turn-On Delay Time	$V_{\rm DD} = 30 V P_{\rm I} = 300$		13	24	ns		
tr	Turn-On Rise Time	$I_{D}=30$ V, $R_{L}=30$ Z $I_{D}=1$ A, $V_{GEN}=10$ V $P_{c}=60$		10	19			
td(off)	Turn-Off Delay Time			32	60			
tr	Turn-Off Fall Time	NG-022		16	30			
Gate Charge	e Characteristics <sup>2</sup>							
Qg	Total Gate Charge	$V_{\text{pg}}=50V$ $V_{\text{pg}}=10V$		21				
Qgs	Gate-Source Charge	$I_{\rm D} = 25 \Lambda$		4.9		nC		
Qgd	Gate-Drain Charge	ID - J.JA		5.8				

Note: 1: Pulse test ; pulse width  $\leq$  300ns, duty cycle  $\leq$  2%.

2: Guaranteed by design, not subject to production testing.

#### **Power Dissipation Drain Current** 4.0 3.0 3.5 2.5 3.0 Io-Drain Current (A) 2.0 Plot - Power (W) 2.5 1.5 2.0 1.5 1.0 1.0 0.5 0.5 T\_=25°C =10V C,V =25 0.0 0.0 0 40 60 80 100 120 140 160 20 160 0 40 60 80 100 120 140 20 T<sub>j</sub>-Junction Temperature (°C) T<sub>j</sub> - Junction Temperature (°C) Safe Operation Area Thermal Transient Impedance Normalized Transient Thermal Resistance 50 2 = 0. 10 1m In-Drain Current (A) Oms 00ms 1 DC Single Pulse 0.1 Mounted on 1in<sup>-</sup> pad Τ, 25 R.,. : 50 °C/W 0.01 1E-3 0.01 0.1 10 30 0.1 10 500 1 1 100

Vps - Drain - Source Voltage (V)

**Typical Characteristics** 

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3 Shenzhen Jiataimu Co.Ltd http: //www.jtmic.com

Square Wave Pulse Duration (sec)



#### **Typical Characteristics (Cont.)**

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## Typical Characteristics (Cont.)

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Cumber I	Dimensions	In Millimeters	Dimensions	s In Inches	
Symbol	Min	Max	Min	Max	
А	1.350	1. 750	0.053	0.069	
A1	0.100	0, 250	0.004	0.010	
A2	1.350	1. 550	0.053	0.061	
b	0. 330	0. 510	0.013	0. 020	
С	0.170	0, 250	0,006	0.010	
D	4. 700	5. 100	0. 185	0.200	
E	3.800	4. 000	0.150	0. 157	
E1	5.800	6. 200	0. 228	0.244	
e	1. 270 (BSC)		0. 050 (BSC)		
L	0. 400	1. 270	0.016	0.050	
θ	0°	8°	0°	8°	

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