

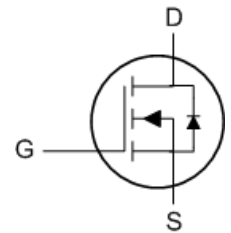
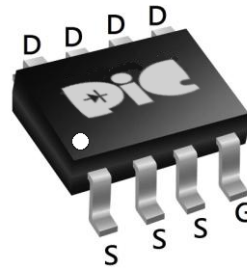
### ➤ General Description

This PAN48TJ48WJ N-Channel enhancement mode power field effect transistor is the high density trench technology and this advanced technology can provide excellent  $R_{ds(On)}$  performance and efficiency for power switching and load switching application., this device also comply with the RoHS and Green Product requirement with full function reliability approved.

### ➤ Feature

- 100% EAS Guaranteed
- Green Device Available
- Super Low Gate Charge
- Excellent  $CdV/dt$  effect decline
- Advanced high cell density Trench technology
- SOP-8 package design

### ➤ SOP-8



### ➤ Application

- Notebook CPU Core-High-Side Switch

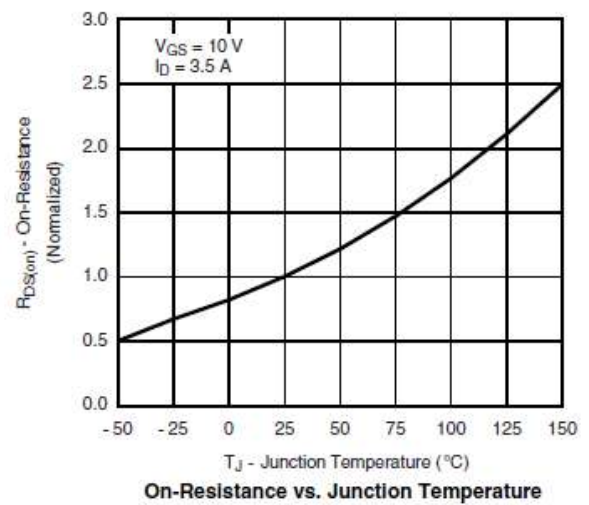
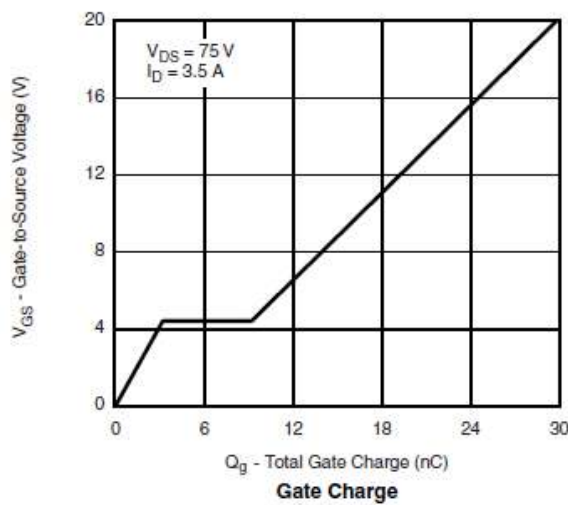
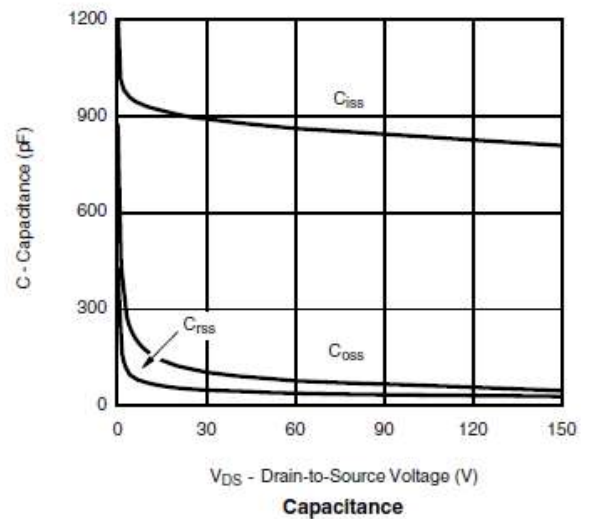
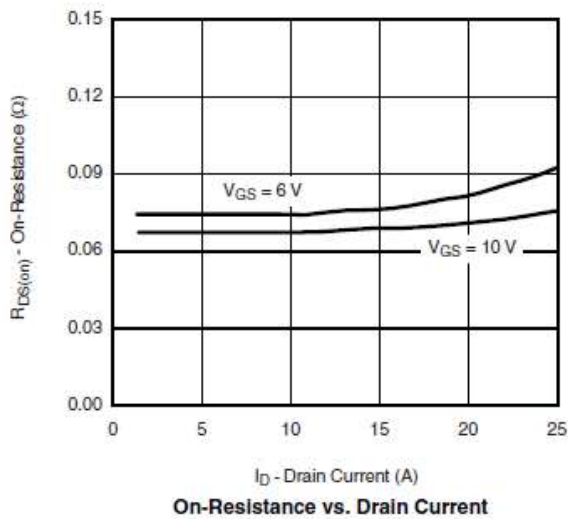
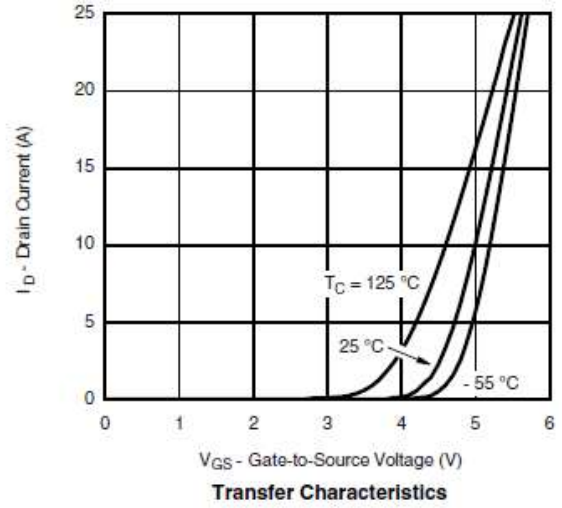
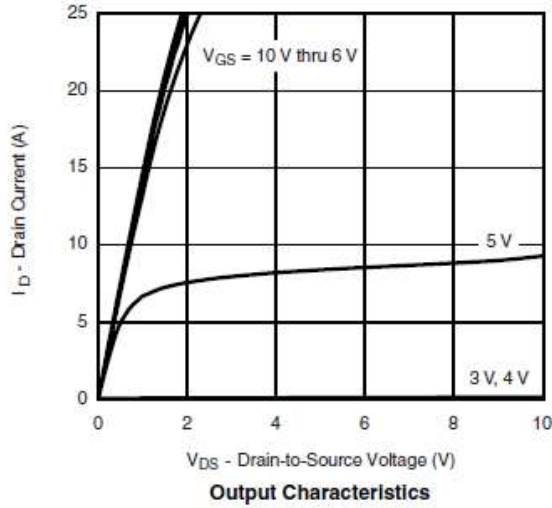
### ➤ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DSS}$	150	V
Gate –Source Voltage	$V_{GSS}$	$\pm 20$	V
Continuous Drain Current( $T_J=150^\circ C$ )	$I_D$	$T_A=25^\circ C$	5.0
		$T_A=70^\circ C$	3.0
Pulsed Drain Current	$I_{DM}$	25	A
Continuous Source Current(Diode Conduction)	$I_S$	2.5	A
Power Dissipation	$P_D$	$T_A=25^\circ C$	2.8
		$T_A=70^\circ C$	1.8
Operating Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature Range	$T_{STG}$	-55/150	$^\circ C$
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	62.5	$^\circ C/W$

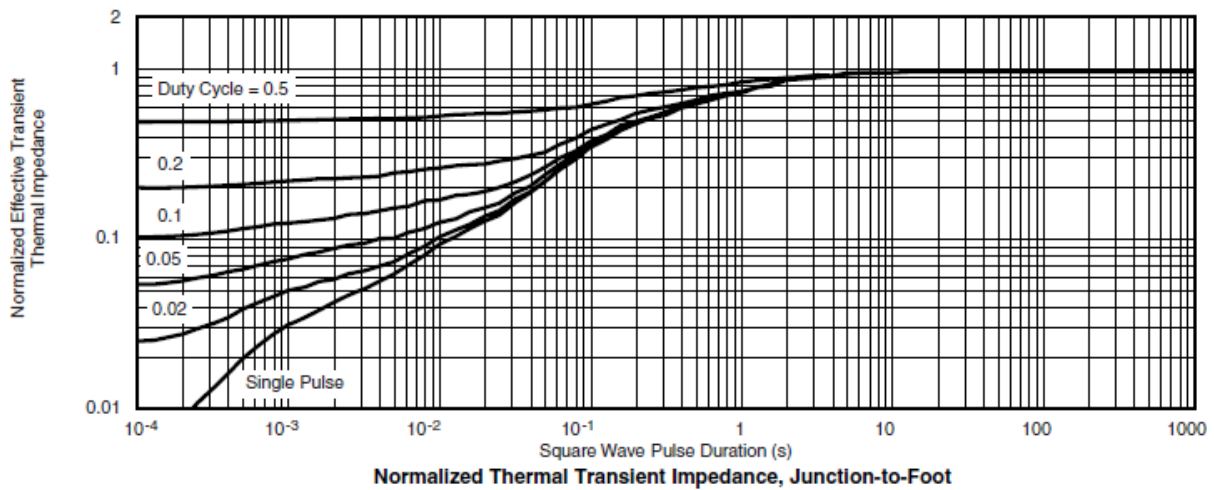
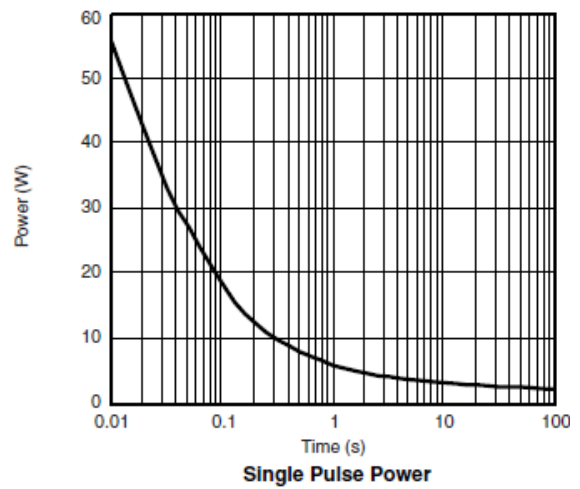
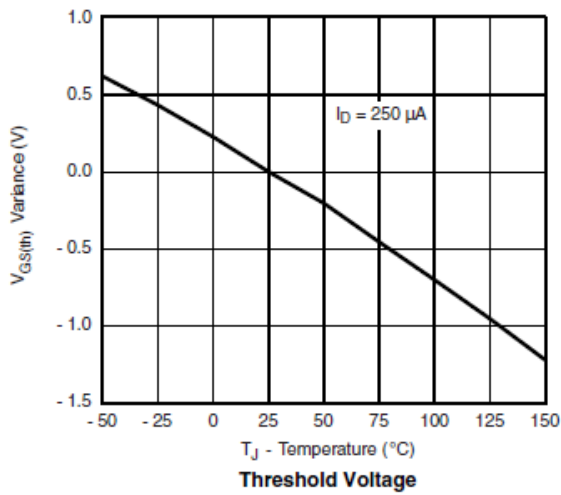
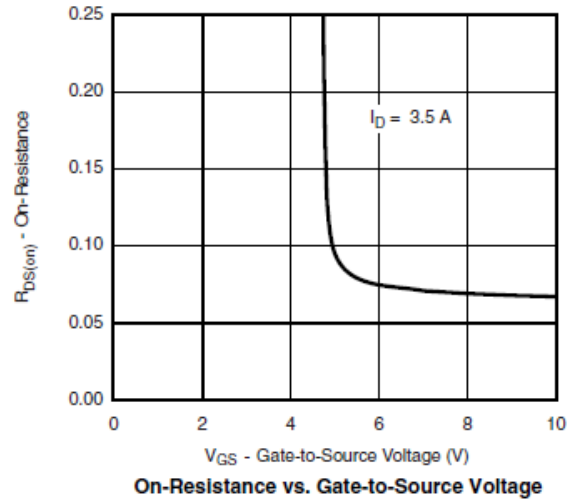
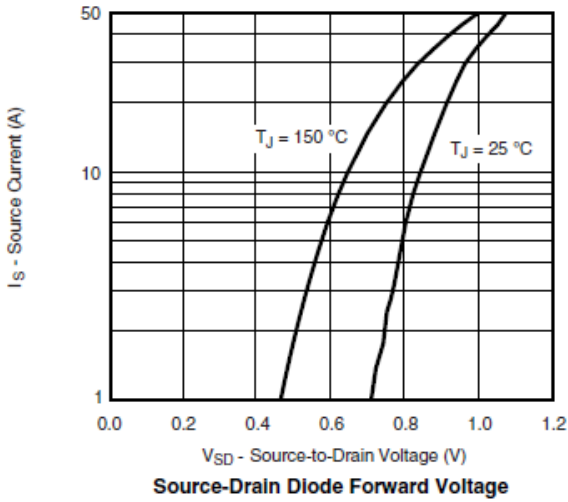
➤ Electrical Characteristics ( $T_J=25^\circ C$  Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	150			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2	3	4	
Gate Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=120V, V_{GS}=0V$			1	uA
		$V_{DS}=120V, V_{GS}=0V$ $T_J=85^\circ C$			5	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq 5V, V_{GS}=10V$	25			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=5.0A$		56	64	m $\Omega$
		$V_{GS}=4.5V, I_D=3.0A$		59	70	
Forward Transconductance	$g_{FS}$	$V_{DS}=15V, I_D=5A$		15		S
Diode Forward Voltage	$V_{SD}$	$I_S=2.5A, V_{GS}=0V$		0.8	1.2	V
<b>Dynamic</b>						
Total Gate Charge	$Q_g$	$V_{DS}=75V, V_{GS}=10V$ $I_D \approx 3.5A$		17	30	nC
Gate-Source Charge	$Q_{gs}$			3.2		
Gate-Drain Charge	$Q_{gd}$			6.0		
Input Capacitance	$C_{iss}$	$V_{DS}=90V, V_{GS}=0V$ $f=1MHz$		850		pF
Output Capacitance	$C_{oss}$			85		
Reverse Transfer Capacitance	$C_{rss}$			50		
Turn-On Time	$t_{d(on)}$	$V_{DD}=75V, R_L=21\Omega$ $I_D \approx 3.5A, V_{GEN}=10V$ $R_G=6\Omega$		10	20	ns
	$t_r$			10	20	
Turn-Off Time	$t_{d(off)}$			25	50	
	$t_f$			18	35	

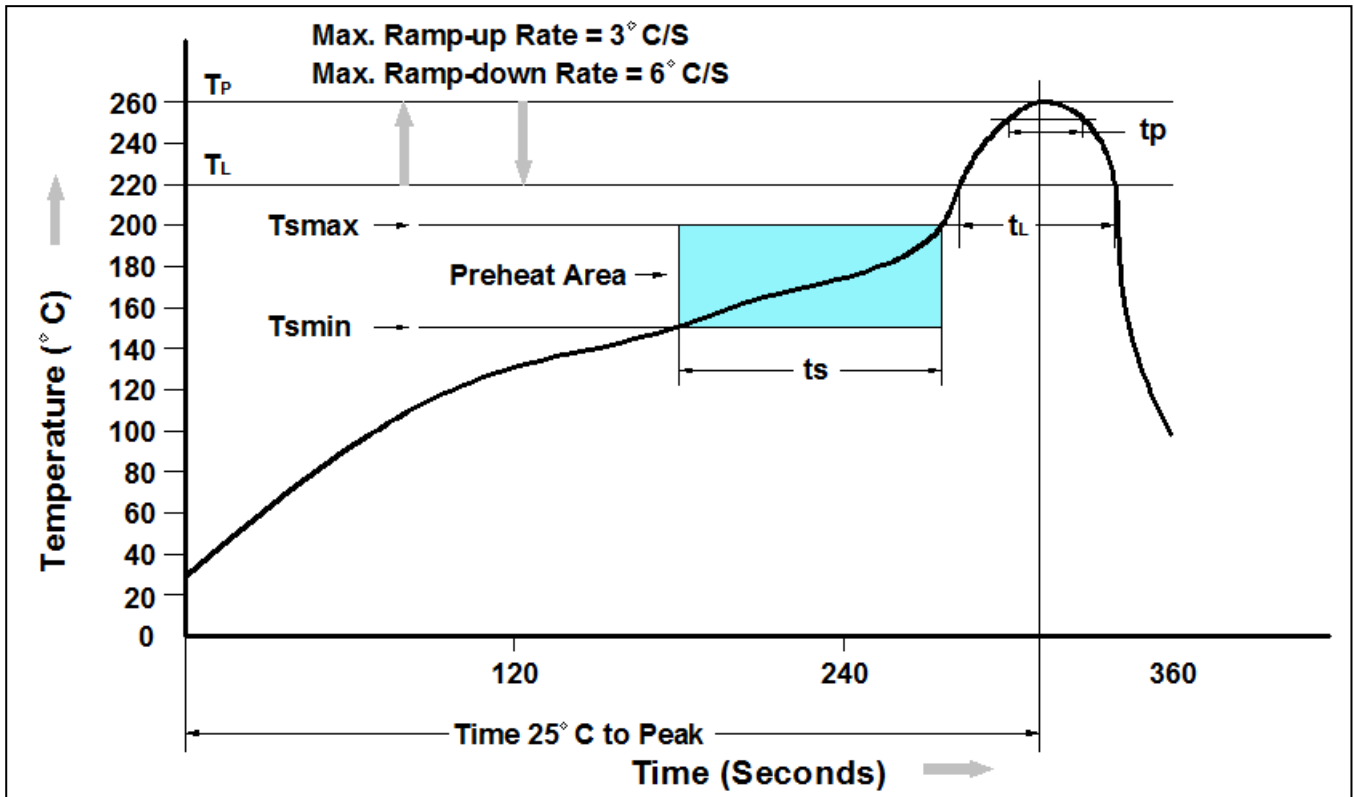
### ➤ Typical Characteristics



### ➤ Typical Characteristics



➤ Recommend IR Reflow Soldering Thermal Profile

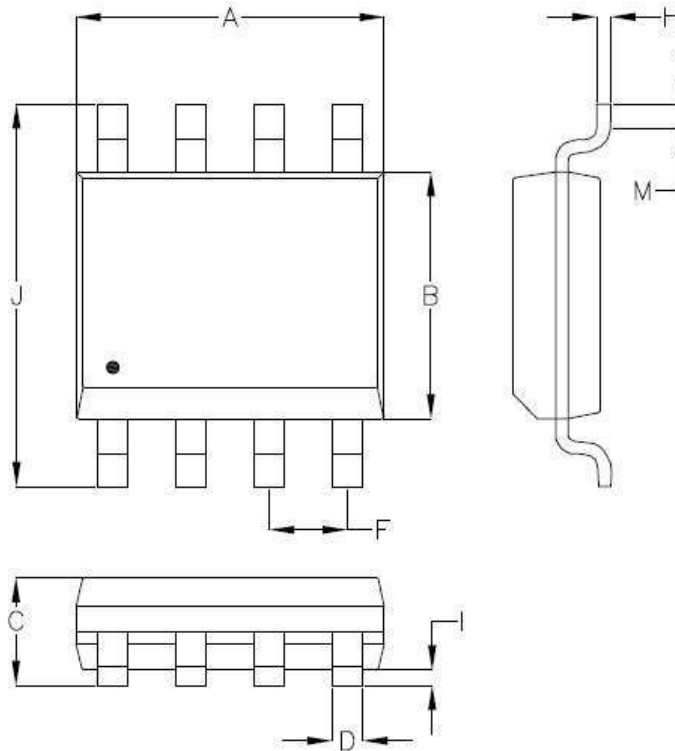


Profile Feature	Pb-Free Assembly Profile
Temperature Min. ( $T_{smin}$ )	150°C
Temperature Max. ( $T_{smax}$ )	200°C
Time ( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )	60-120 seconds
Average Ramp-up Rate ( $t_L$ to $t_P$ )	3°C/second max.
Liquidous Temperature ( $T_L$ )	217°C
Time ( $t_L$ ) Maintained Above ( $T_L$ )	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time ( $t_P$ ) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate ( $T_P$ to $T_L$ )	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.

➤ Ordering Information

Part Number	Description	Quantity
PAN48TJ48WJ	SOP-8 Reel	2500 pcs

➤ Package Information (SOP-8)



SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.700	5.150	0.185	0.203
B	3.700	4.100	0.146	0.161
C	1.23	1.753	0.048	0.069
D	0.310	0.510	0.012	0.020
F	1.070	1.470	0.042	0.058
H	0.160	0.254	0.006	0.010
I	0.050	0.254	0.002	0.010
J	5.750	6.250	0.226	0.246
M	0.400	1.270	0.016	0.050

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