

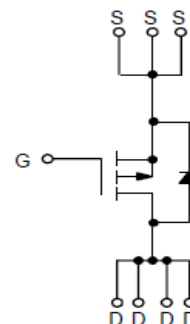
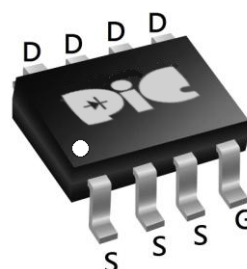
➤ General Description

This PAP44TJ03WJ P-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

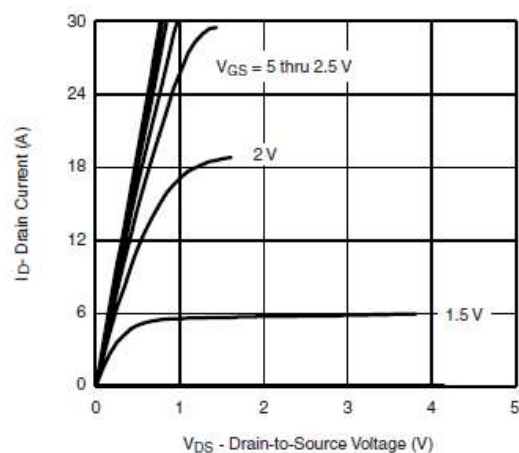
➤ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	-20	V
Gate –Source Voltage	V_{GSS}	± 12	V
Continuous Drain Current($T_J=150^{\circ}C$)	I_D	$T_A=25^{\circ}C$ -9.0	A
		$T_A=70^{\circ}C$ -6.0	
Pulsed Drain Current	I_{DM}	-40	A
Continuous Source Current(Diode Conduction)	I_S	-2	A
Power Dissipation	P_D	$T_A=25^{\circ}C$ 2.8	W
		$T_A=70^{\circ}C$ 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	$^{\circ}C/W$

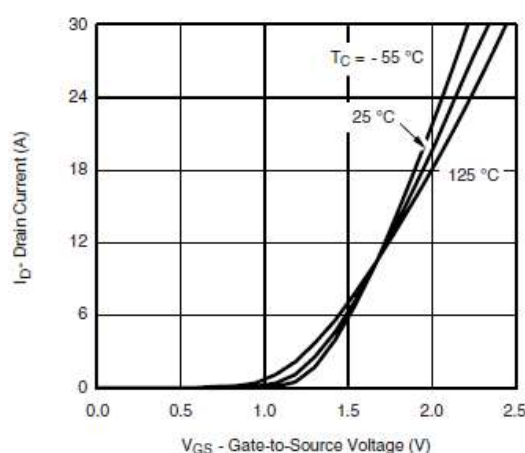
➤ Electrical Characteristics ($T_J=25^\circ C$ Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4		-0.8	
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 12V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-16V, V_{GS}=0V$			-1	μA
		$V_{DS}=-16V, V_{GS}=0V$ $T_J=85^\circ C$			-10	
On-State Drain Current	$I_{D(on)}$	$V_{DS}\leq -10V, V_{GS}=-10V$	-30			A
		$V_{DS}\leq -5V, V_{GS}=-4.5V$	-5			
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-9.0A$		18	26	m Ω
		$V_{GS}=-2.5V, I_D=-8.0A$		24	34	
		$V_{GS}=-1.8V, I_D=-6.0A$		58	82	
Forward Transconductance	g_{FS}	$V_{DS}=-5V, I_D=-3.6A$		10		S
Diode Forward Voltage	V_{SD}	$I_S=-1.6A, V_{GS}=0V$		-0.85	-1.2	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-5.0V$ $I_D=-4.8A$		17	35	nC
Gate-Source Charge	Q_{gs}			2.5		
Gate-Drain Charge	Q_{gd}			4.0		
Input Capacitance	C_{iss}	$V_{DS}=-10V, V_{GS}=0V$ $f=1MHz$		1450		pF
Output Capacitance	C_{oss}			350		
Reverse Transfer Capacitance	C_{rss}			215		
Turn-On Time	$t_{d(on)}$	$V_{DD}=-10V, R_L=15\Omega$ $I_D=-5.0A, V_{GEN}=-10V$ $R_G=6\Omega$		18	30	ns
	t_r			30	50	
Turn-Off Time	$t_{d(off)}$			100	150	
	t_f			55	80	

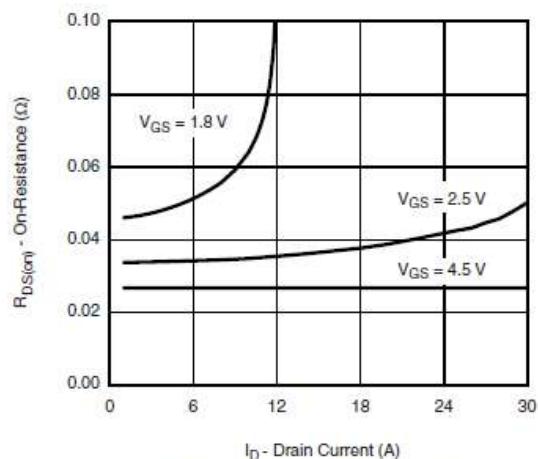
➤ Typical Characteristics



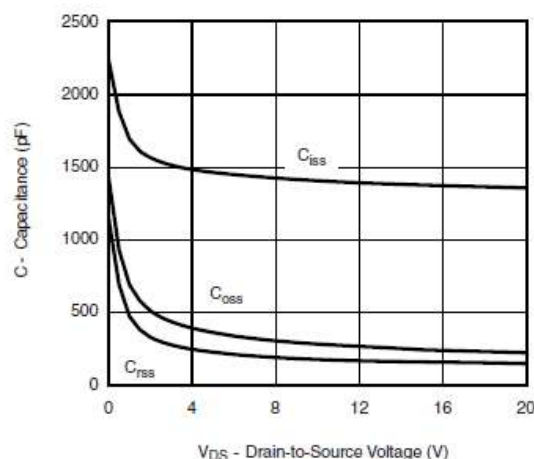
Output Characteristics



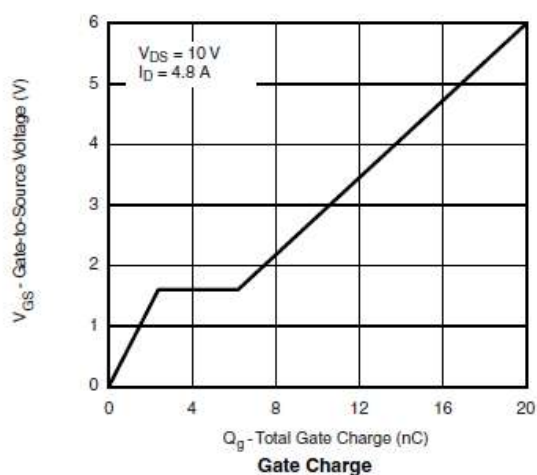
Transfer Characteristics



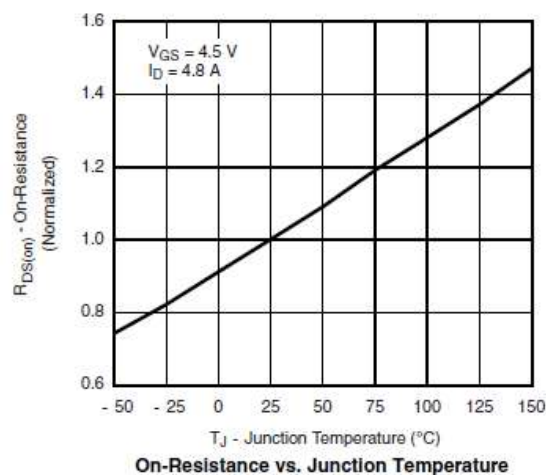
On-Resistance vs. Drain Current



Capacitance

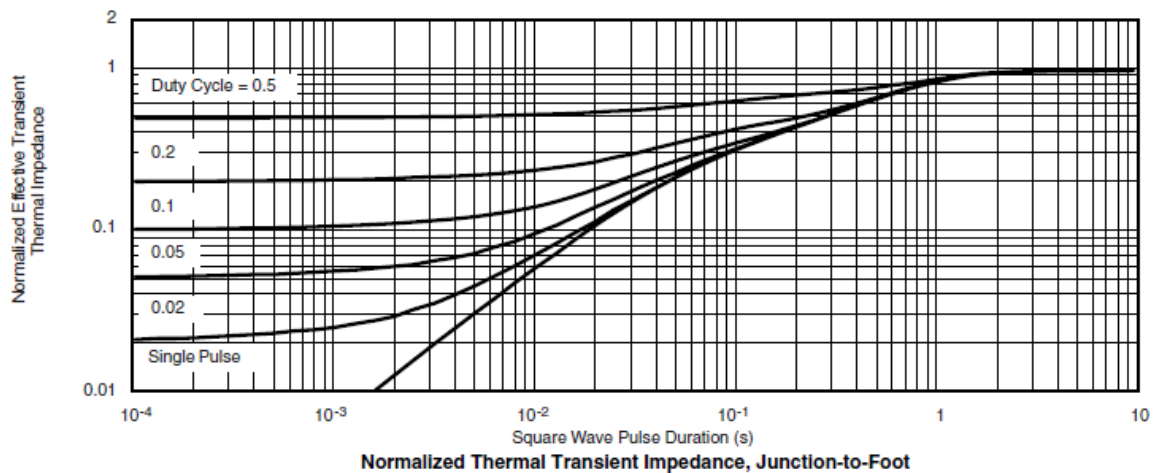
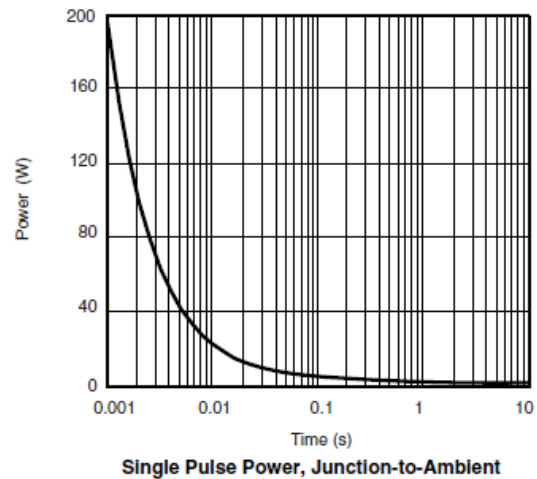
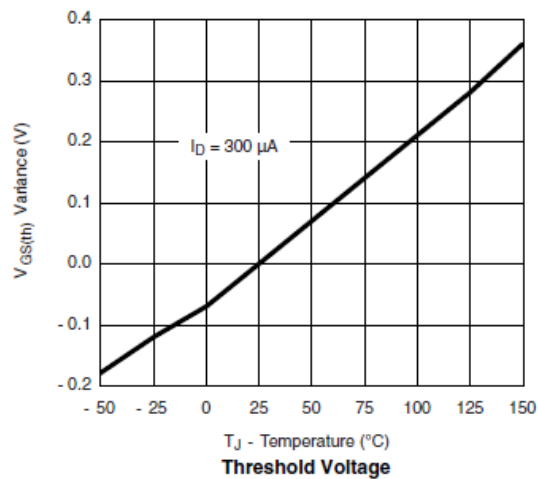
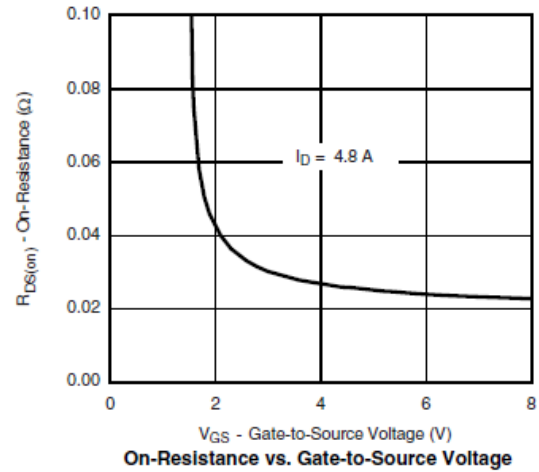
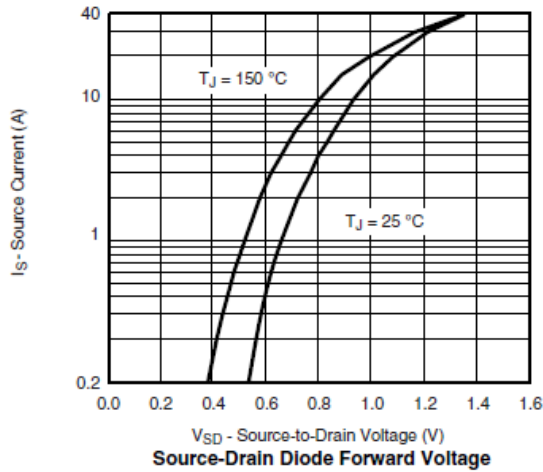


Gate Charge

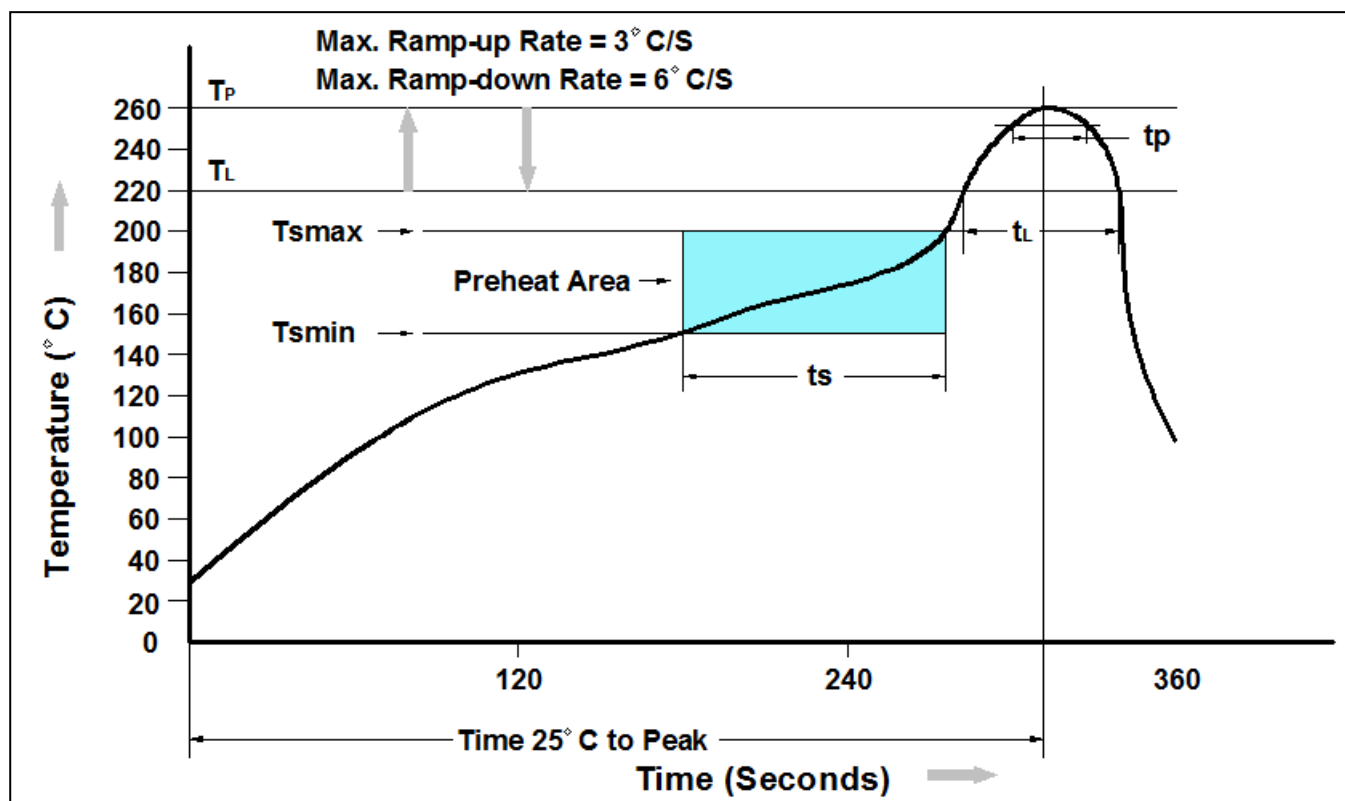


On-Resistance vs. Junction Temperature

➤ Typical Characteristics



➤ Recommend IR Reflow Soldering Thermal Profile

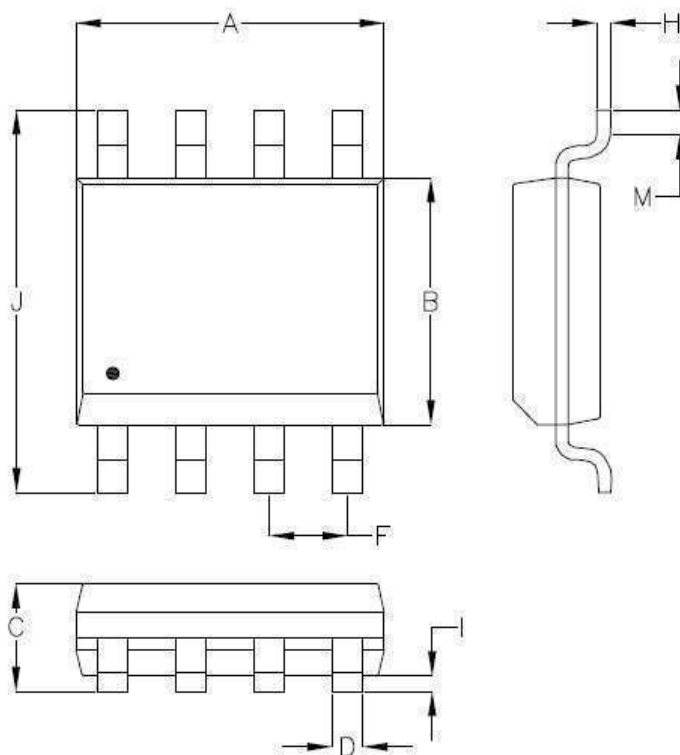


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T_{smin})	150°C
Temperature Max. (T_{smax})	200°C
Time (t_s) from (T_{smin} to T_{smax})	60-120 seconds
Average Ramp-up Rate (t_L to t_P)	3°C/second max.
Liquidous Temperature (T_L)	217°C
Time (t_L) Maintained Above (T_L)	60 – 150 seconds
Peak 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
PAP44TJ03WJ	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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