

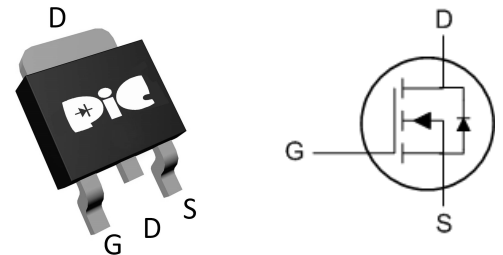
➤ General Description

This PAN99TX10X 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

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

➤ TO-252



➤ Application

- Switch application
- DC/DC Converters Power
- Tools

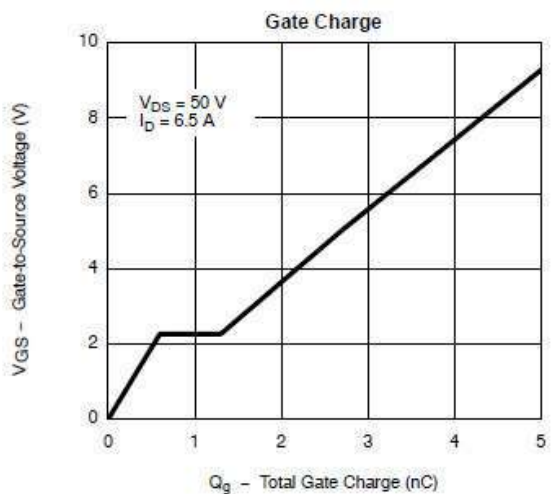
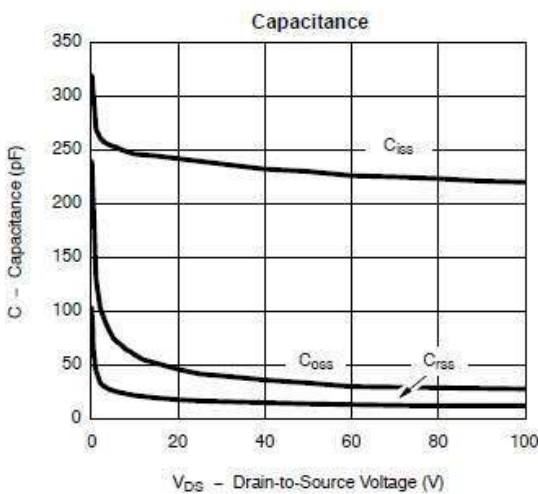
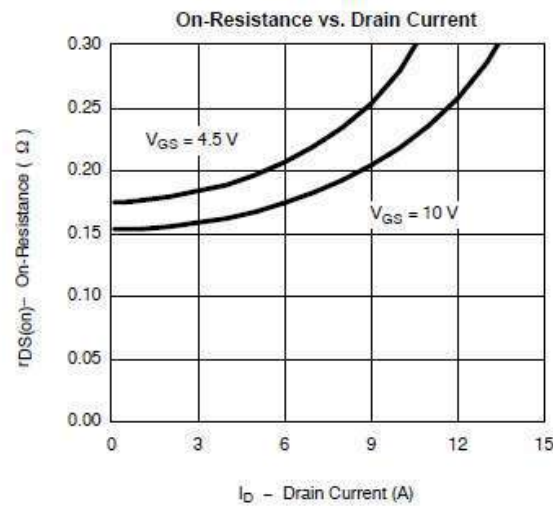
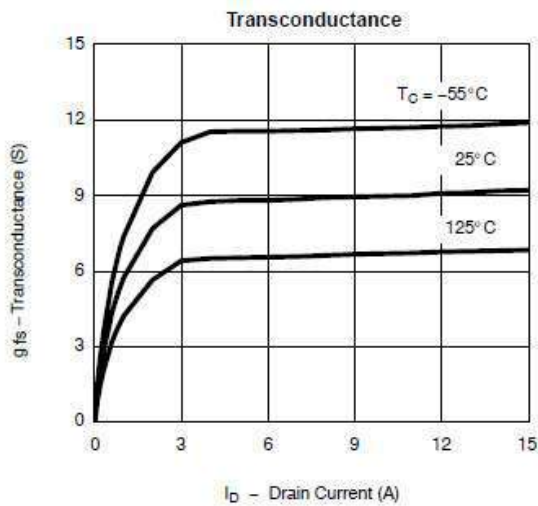
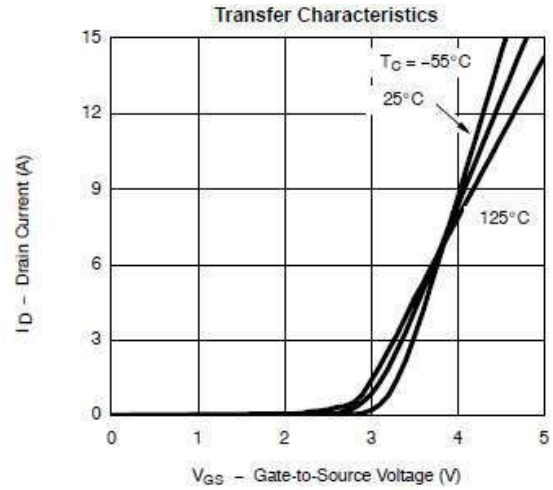
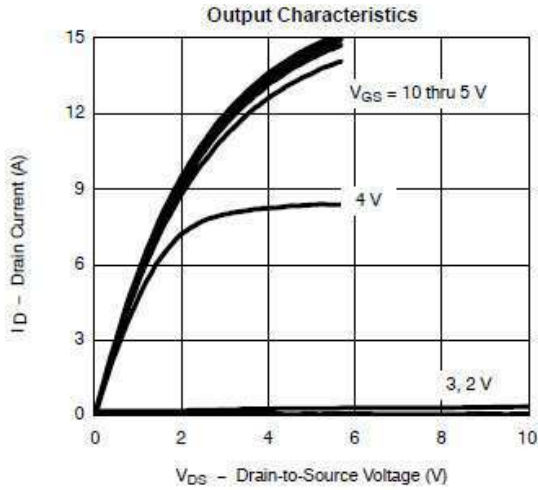
➤ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	100	V
Gate –Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current($T_J=150^\circ C$)	I_D	$T_c=25^\circ C$	6.5
		$T_c=70^\circ C$	3.8
Pulsed Drain Current	I_{DM}	8	A
Continuous Source Current(Diode Conduction)	I_S	6.5	
Single Pulse Avalanche Current	I_{AS}	7.0	
Power Dissipation	P_D	$T_A=25^\circ C$	40
		$T_A=70^\circ C$	15
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	$^\circ C/W$

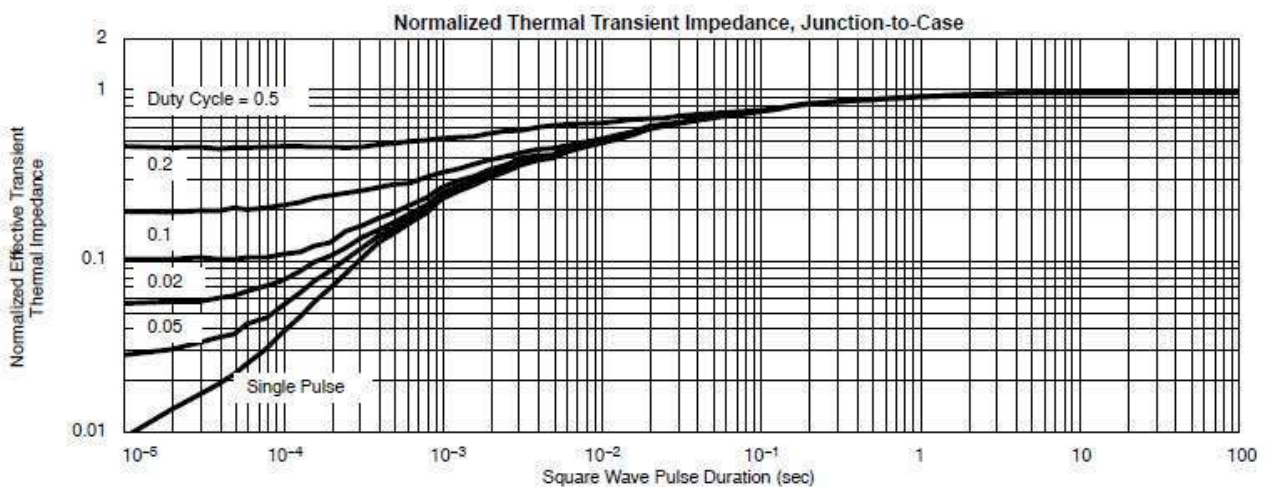
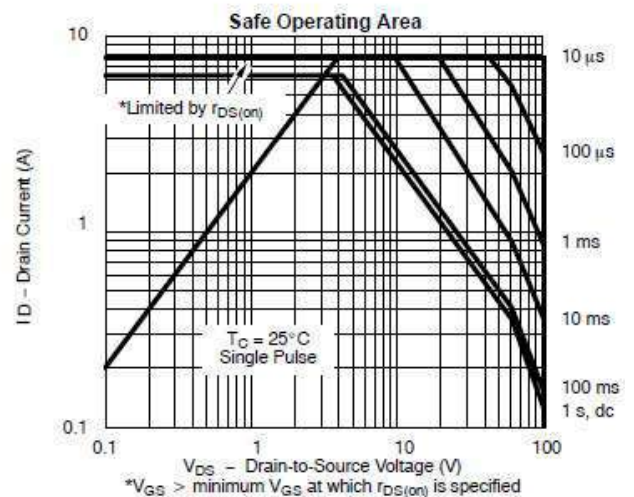
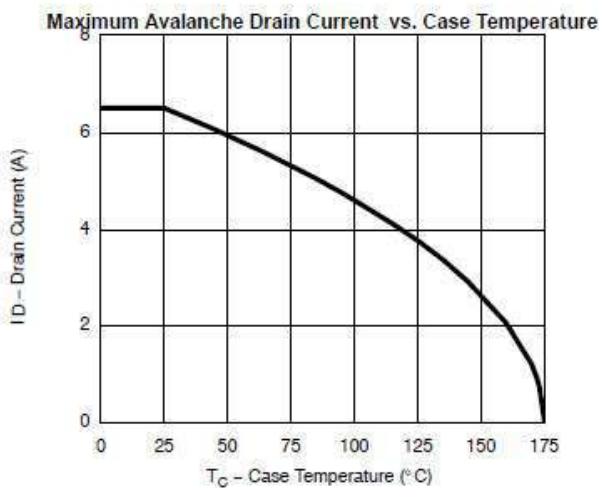
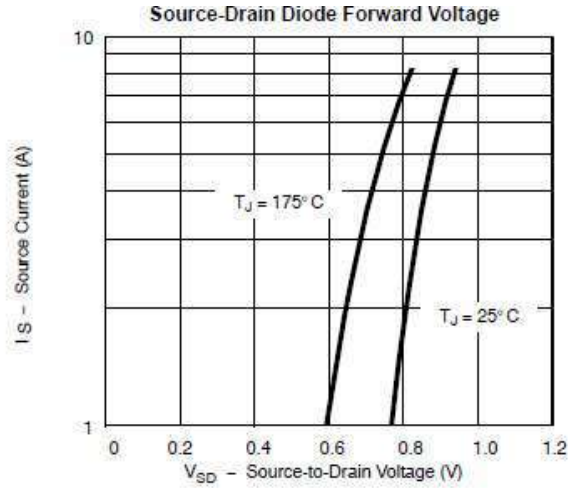
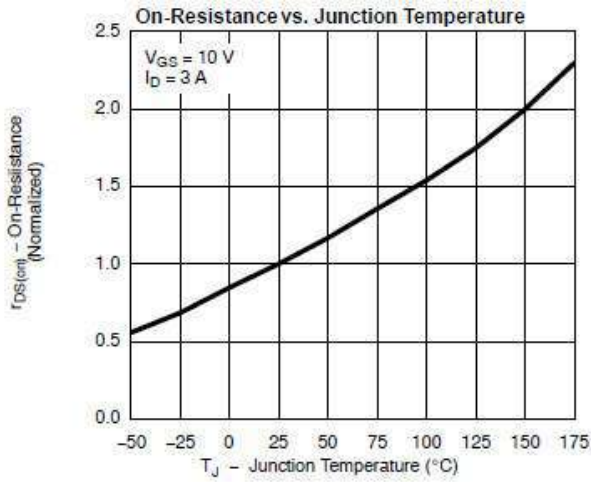
➤ Electrical Characteristics ($T_J=25^\circ C$ Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		2.0	
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=80V, V_{GS}=0V$			1	uA
		$V_{DS}=80V, V_{GS}=0V$ $T_J=85^\circ C$			5	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq 5V, V_{GS}=4.5V$	8			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=4A$		285	320	m Ω
		$V_{GS}=4.5V, I_D=4A$		298	340	
Forward Transconductance	g_{FS}	$V_{DS}=15V, I_D=3A$		8.5		S
Diode Forward Voltage	V_{SD}	$I_S=6A, V_{GS}=0V$		0.8	1.3	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=50V, V_{GS}=5V$ $I_D=6.5A$		2.7	5	nC
Gate-Source Charge	Q_{gs}			0.7		
Gate-Drain Charge	Q_{gd}			0.7		
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V$ $f=1MHz$		250		pF
Output Capacitance	C_{oss}			40		
Reverse Transfer Capacitance	C_{rss}			20		
Turn-On Time	$t_{d(on)}$	$V_{DD}=50V, R_L=7.5\Omega$ $I_D=6.5A, V_{GEN}=10V$ $R_G=2.5\Omega$		7	12	ns
	t_r			8	15	
Turn-Off Time	$t_{d(off)}$			8	15	
	t_f			10	18	

➤ Typical Characteristics



➤ Typical Characteristics



➤ Recommand IR Reflow Soldering Thermal Profile

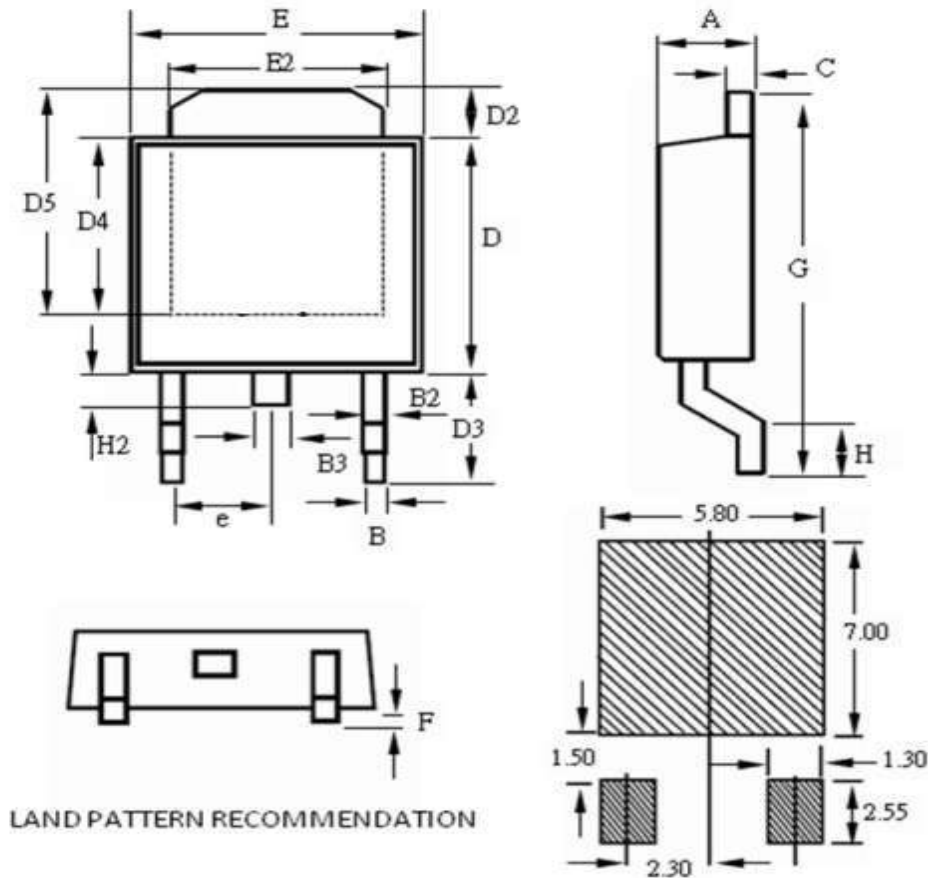


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T_{smin})	150°C
Temperature Max. (T_{smax})	200°C
Time (t_s) from (T_{smin} to T_{smax})	60-120 seconds
Average Ramp-up Rate (t_L to t_P)	3°C/second max.
Liquidous Temperature (T_L)	217°C
Time (t_L) Maintained Above (T_L)	60 – 150 seconds
Peak 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
PAN99TX10X	TO-252 Reel	2500 pcs

➤ Package Information (TO-252)



SYMBOLS	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	2.10	--	2.50	0.083	--	0.098
B	0.30	--	0.89	0.012	--	0.035
B2	0.40	--	1.14	0.016	--	0.045
B3	0.60	--	1.00	0.024	--	0.039
C	0.40	--	0.89	0.016	--	0.035
D	5.30	--	6.25	0.209	--	0.246
D2	0.50	--	1.70	0.020	--	0.067
D3	2.20	--	3.40	0.087	--	0.134
D4	4.32	--	--	0.170	--	--
D5	5.21	--	--	0.205	--	--
E	6.30	--	6.73	0.248	--	0.265
E2	4.80	--	5.46	0.189	--	0.215
F	0.00	--	0.30	0.000	--	0.012
G	9.20	--	10.41	0.362	--	0.410
H	0.90	--	1.95	0.035	--	0.077
H2	0.50	--	1.10	0.020	--	0.043
e	--	2.30	--	--	0.091	--

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