

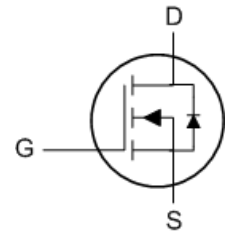
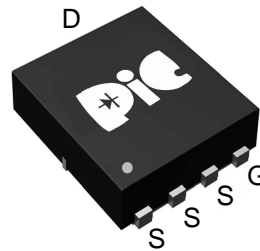
➤ General Description

This PAN68TY82SY 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
- DFN5x6B-EP1 package design

➤ DFN5X6B-EP1



➤ Application

- DC/DC Primary Side Switch
- Industrial Synchronous
- Rectification Load Switch
- DC/DC Converters

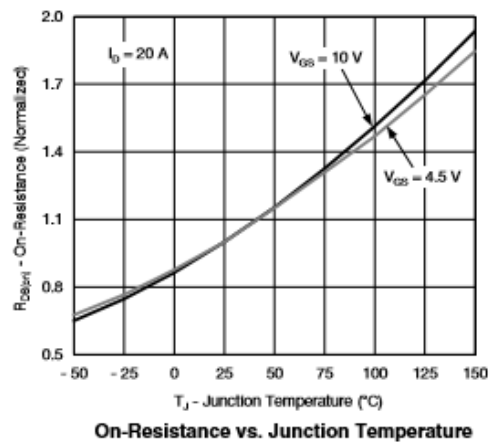
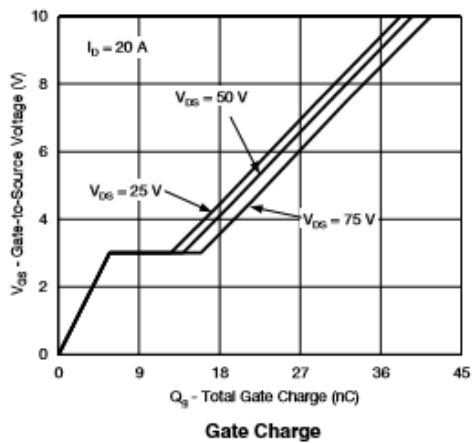
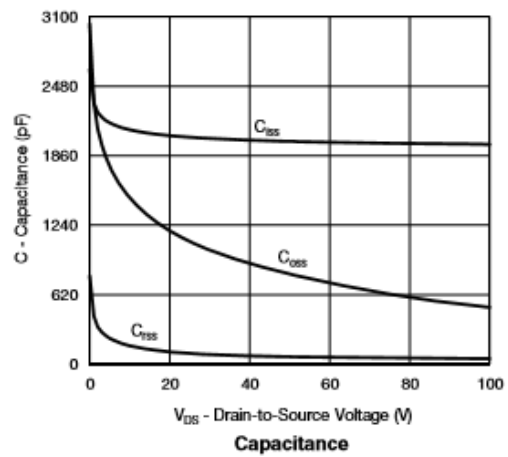
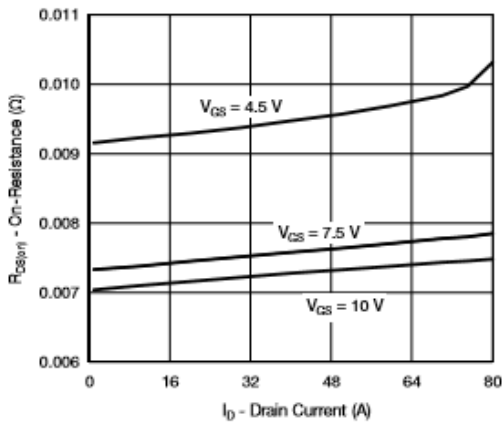
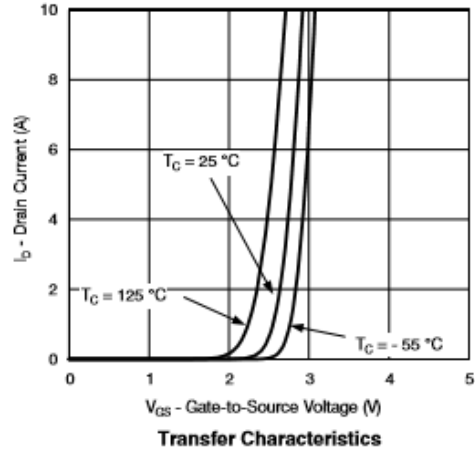
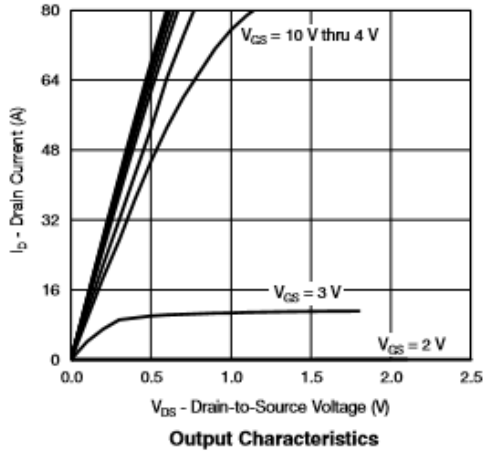
➤ Absolute Maximum Ratings

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_{DSM}	$T_A=25^\circ C$	17
		$T_A=70^\circ C$	13
Pulsed Drain Current	I_{DM}	80	A
Continuous Source Current(Diode Conduction)	I_S	4.9	
Single Pulse Avalanche Current	I_{AS}	$L=0.1mH$	30
			E_{AS}
Power Dissipation	P_D	$T_A=25^\circ C$	5.4
		$T_A=75^\circ C$	3.4
Operating Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{STG}	-55/150	$^\circ C$
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	$t \leq 10 s$	15
		Steady-State	45

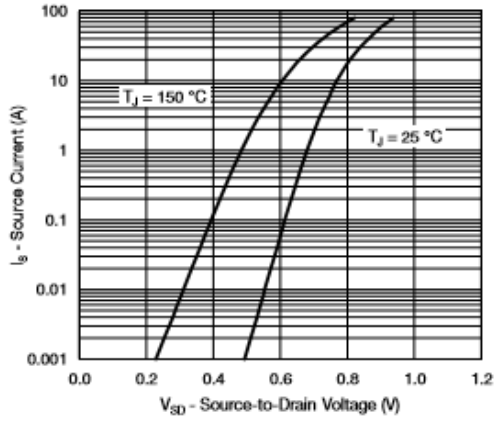
➤ Electrical Characteristics ($T_J=25^\circ C$ Unless otherwise noted)

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	1.6	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
		$V_{DS}=80V, V_{GS}=0V$ $T_J=85^\circ C$			10	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq 5V, V_{GS}=10V$	30			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=15A$		7.3	8.5	m Ω
		$V_{GS}=4.5V, I_D=10A$		10.8	12.5	
Forward Transconductance	g_{FS}	$V_{DS}=10V, I_D=20A$		60		S
Diode Forward Voltage	V_{SD}	$I_S=5A, V_{GS}=0V$		0.8	1.3	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=50V, V_{GS}=4.5V$ $I_D \equiv 10A$		20	40	nC
Gate-Source Charge	Q_{gs}			6		
Gate-Drain Charge	Q_{gd}			9		
Input Capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V$ $f=1MHz$		1950		pF
Output Capacitance	C_{oss}			735		
Reverse Transfer Capacitance	C_{rss}			60		
Turn-On Time	$t_{d(on)}$	$V_{DD}=50V, R_L=5\Omega$ $I_D \equiv 10A, V_{GEN}=10V$ $R_G=1\Omega$		12	25	ns
	t_r			10	20	
Turn-Off Time	$t_{d(off)}$			35	70	
	t_f			10	20	

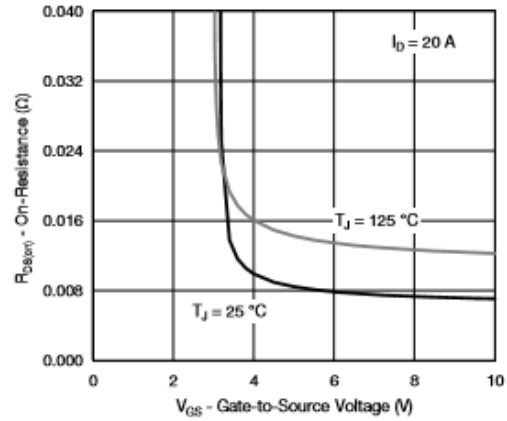
➤ Typical Characteristics



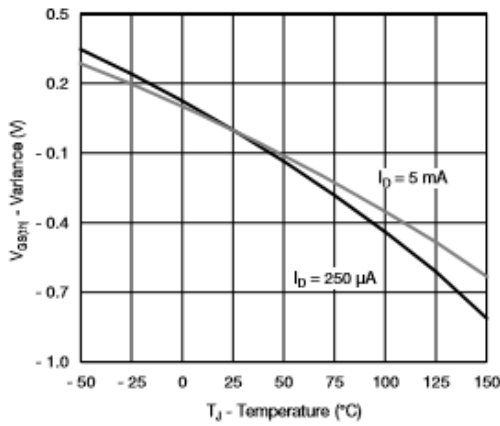
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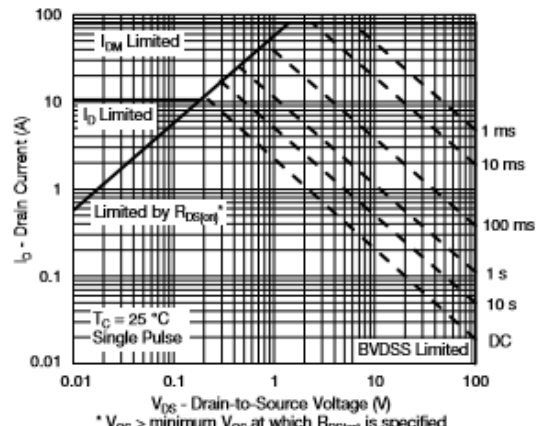
Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage

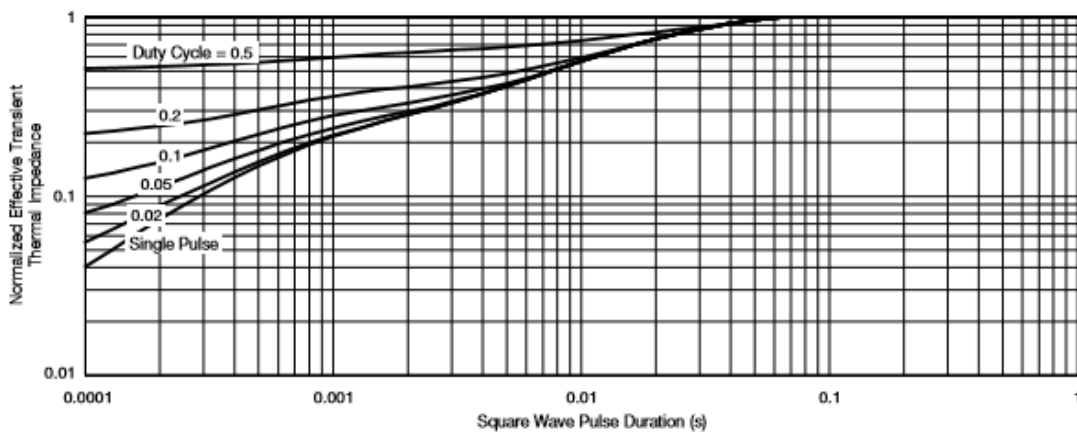


Threshold Voltage



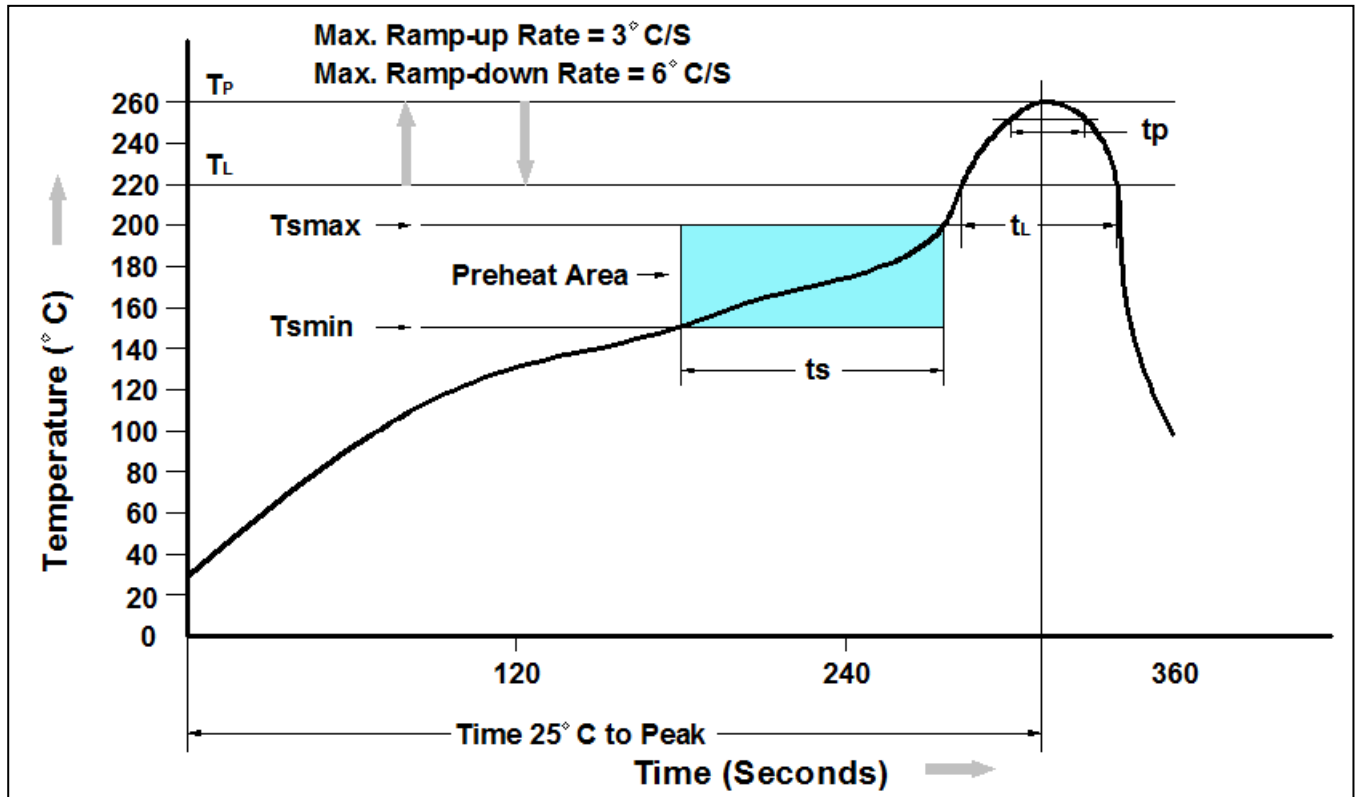
* $V_{GS} >$ minimum V_{GS} at which $R_{DS(on)}$ is specified

Safe Operating Area, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Case

➤ Recommend IR Reflow Soldering Thermal Profile

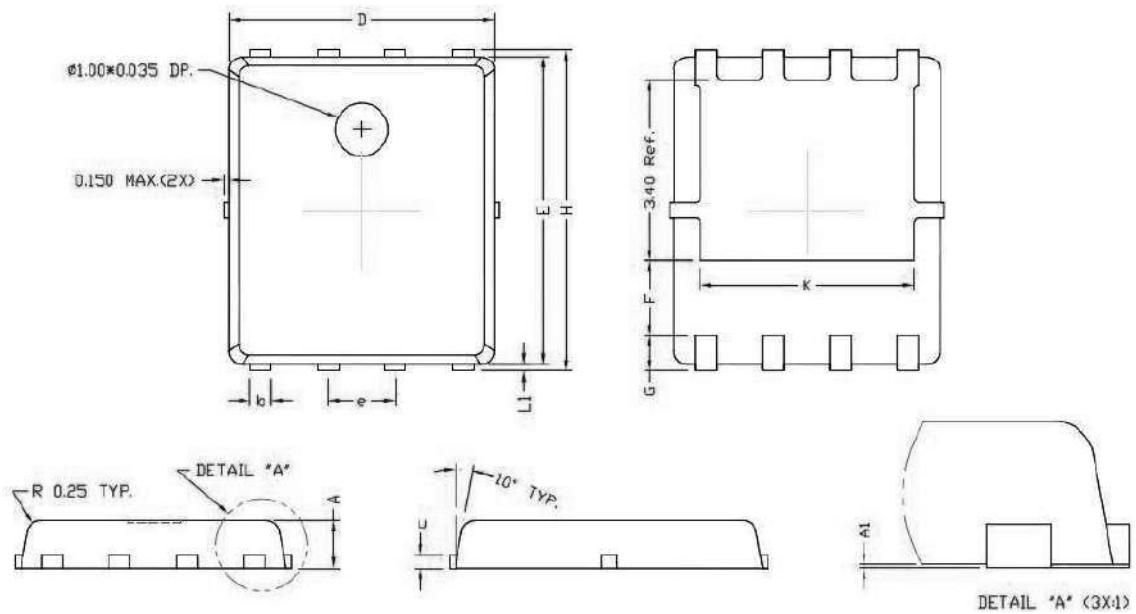


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T _{smin})	150°C
Temperature Max. (T _{smax})	200°C
Time (t _s) from (T _{smin} to T _{smax})	60-120 seconds
Average Ramp-up Rate (t _L to t _P)	3°C/second max.
Liquidous Temperature (T _L)	217°C
Time (t _L) Maintained Above (T _L)	60 – 150 seconds
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
PAN68TY82SY	DFN5X6B-EP1 Reel	2500 pcs

➤ Package Information (DFN5X6B-EP1)



DIMENSIONS

REF.	Millimeters		REF.	Millimeters	
	Min.	Max.		Min.	Max.
A	0.80	1.00	E	5.70	5.90
A1	0.00	0.05	e	1.27 BSC.	
b	0.35	0.49	H	5.95	6.20
c	0.254 Ref.		L1	0.10	0.18
D	4.90	5.10	G	0.60 Ref.	
F	1.40 Ref.		K	4.00 Ref.	

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