PAN68TY82SY

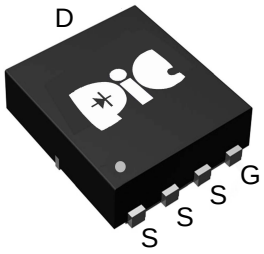
N-Ch 100V Fast Switching MOSFET

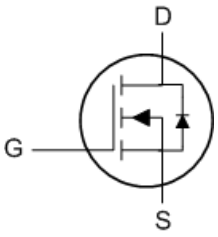
V_{DS}=100V, I_D=17A, $RDS_{(ON)}$=8.5mΩ

➢ 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 Rds(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.

➢ DFN5X6B-EP1





➢ 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

➢ Application

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

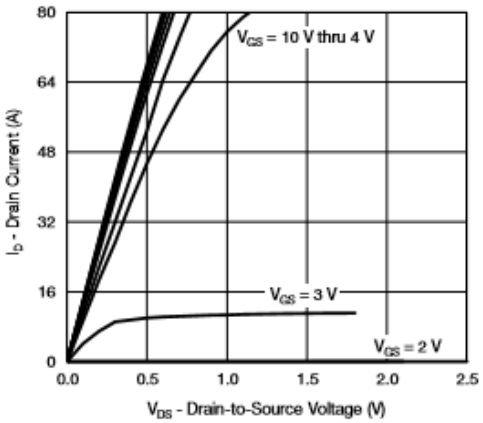
➢ Absolute Maximum Ratings

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DSS}	100	V
Gate –Source Voltage		V_{GSS}	±20	V
Continuous Drain Current(T_J=150℃)	T_A=25℃	I_{DSM}	17	A
	T_A=70℃		13	
Pulsed Drain Current		I_{DM}	80	
Continuous Source Current(Diode Conduction)	T_A=25℃	I_S	4.9	
Single Pulse Avalanche Current	L=0.1mH	I_{AS}	30	
		E_{AS}	45	mJ
Power Dissipation	T_A=25℃	P_D	5.4	W
	T_A=75℃		3.4	
Operating Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{STG}	-55/150	℃
Thermal Resistance-Junction to Ambient	t ≤ 10 s	$R_{\theta JA}$	15	℃/W
	Steady-State		45	

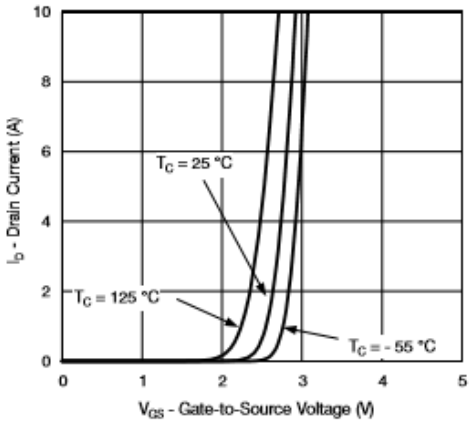
➢ N-Channel Electrical Characteristics (TJ=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250uA	100			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	1.0	1.6	2.0	
Gate Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±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°C			10	
On-State Drain Current	$I_{D(on)}$	V_{DS}≧5V, V_{GS}=10V	30			A
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=15A		7.3	8.5	mΩ
		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≡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=5Ω I_D≡10A, V_{GEN}=10V R_G=1Ω		12	25	ns
	t_r			10	20	
Turn-Off Time	$t_{d(off)}$			35	70	
	t_f			10	20	

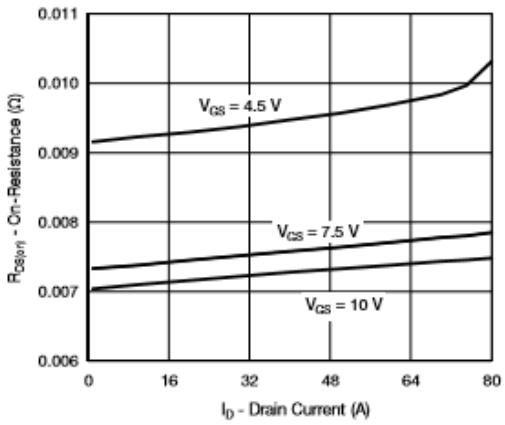
➢ Typical Characteristics



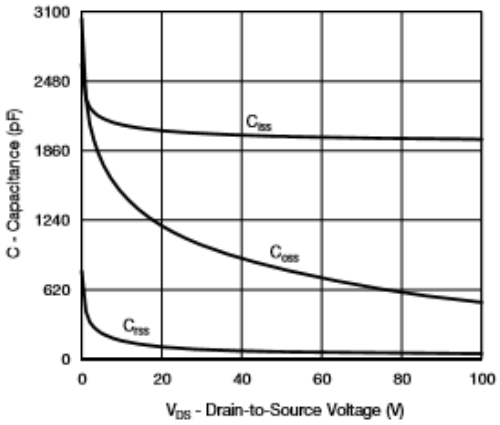
Output Characteristics



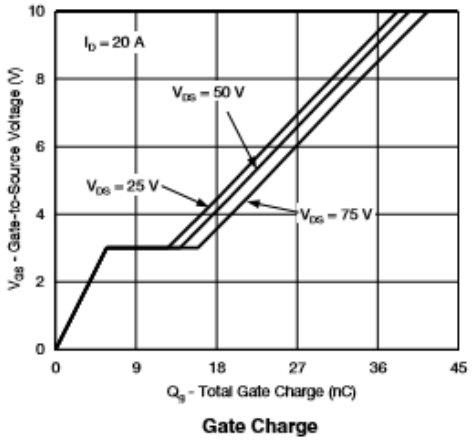
Transfer Characteristics



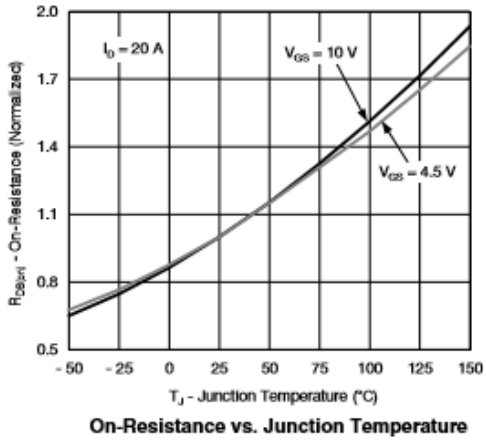
On-Resistance vs. Drain Current and Gate Voltage



Capacitance

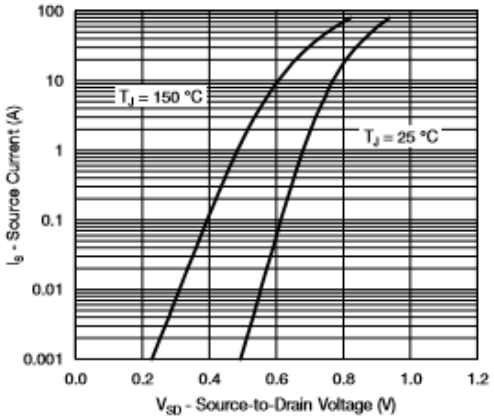


Gate Charge

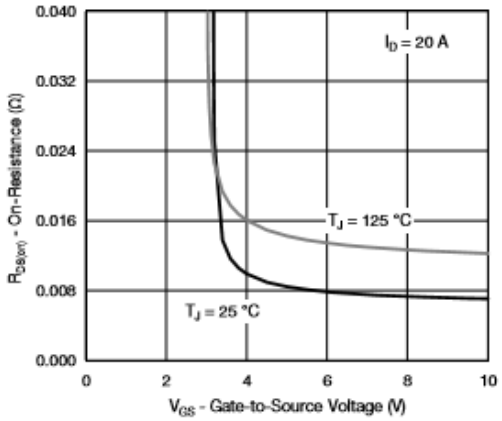


On-Resistance vs. Junction Temperature

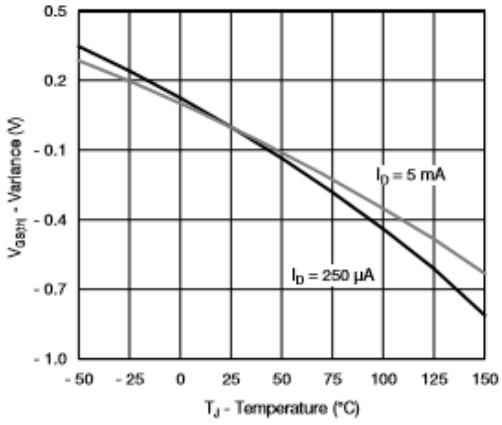
➢ Typical Characteristics



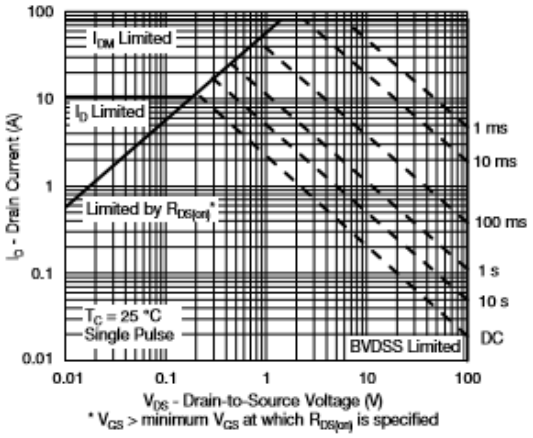
Source-Drain Diode Forward Voltage



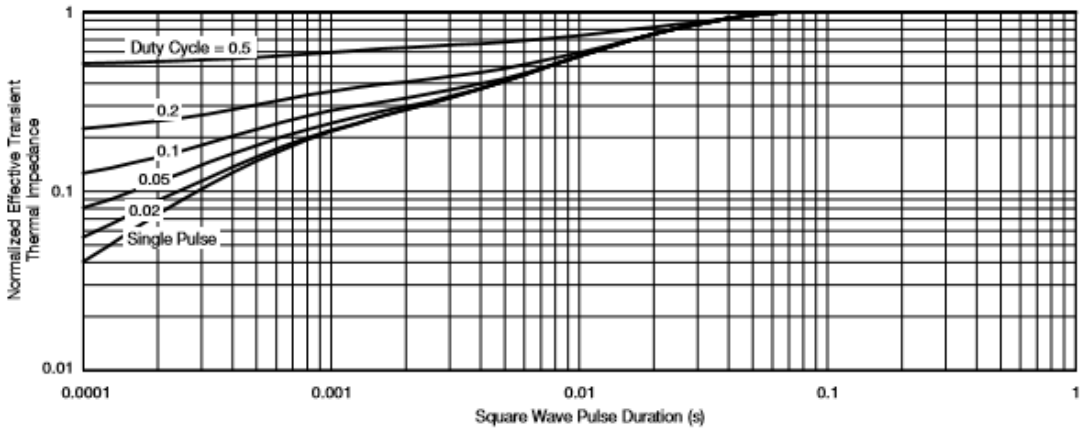
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage

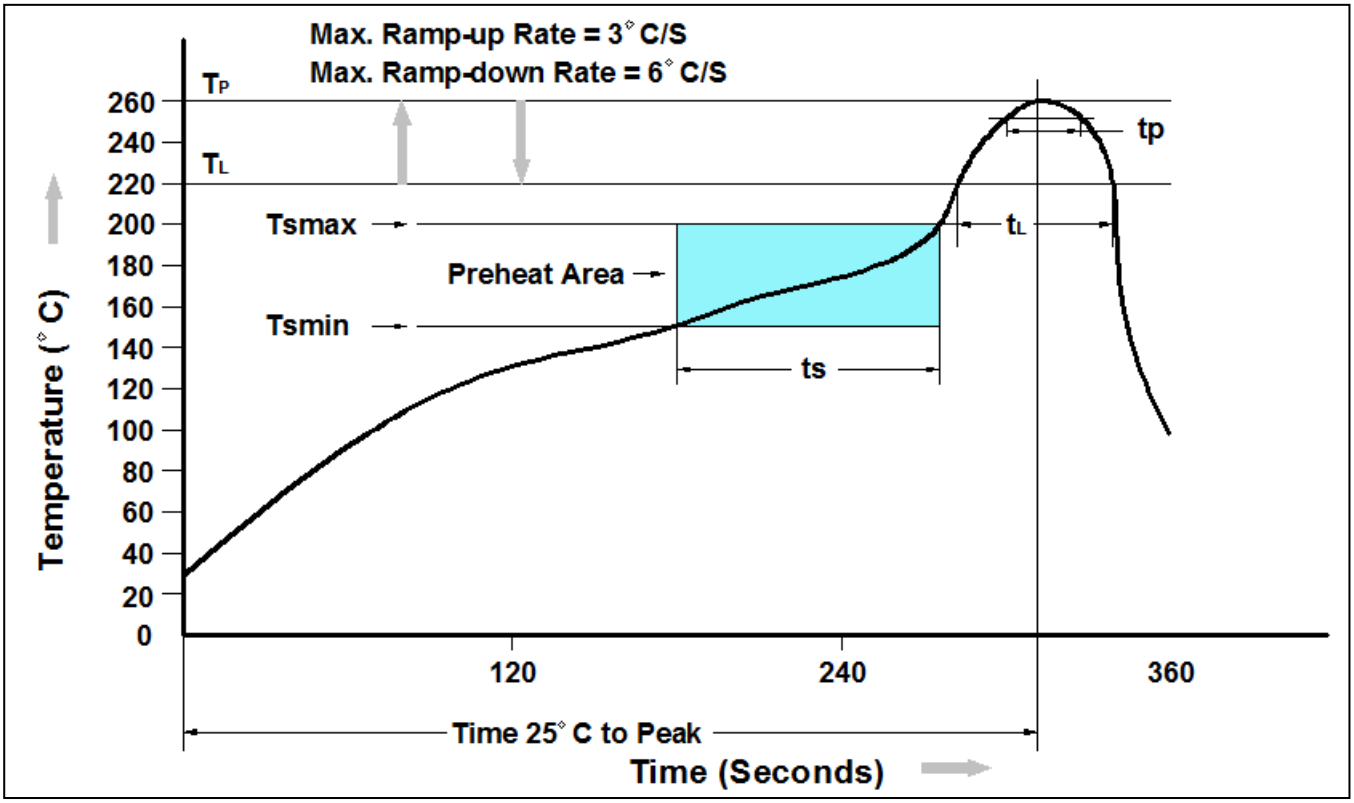


Safe Operating Area, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Case

➢ Recommand IR Reflow Soldering Thermal Profile

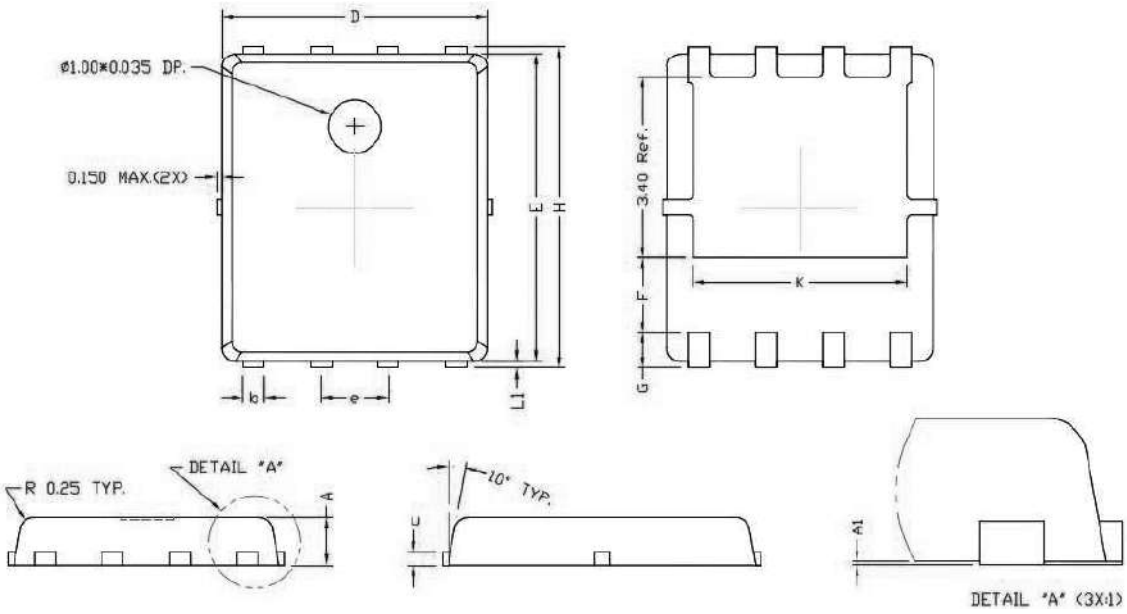


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (Tsmin to Tsmax)	60-120 seconds
Average Ramp-up Rate (tL to tP)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time (tP) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate (TP to TL)	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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