PAN26TB14QB

N-Ch 100V Fast Switching MOSFET

V_{DS}=100V, I_D=3.3A, $RDS_{(ON)}$=166mΩ

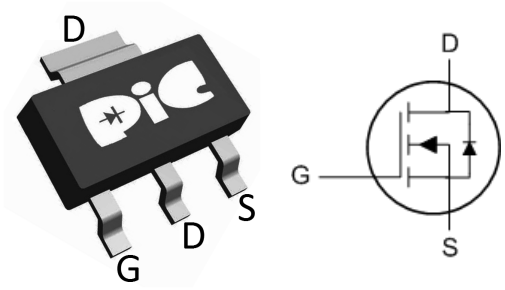
➢ General Description

This PAN26TB14QB 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.

➢ Feature

- ●Green Device Available
- ●Super Low Gate Charge
- ●Excellent CdV/dt effect decline
- ●Advanced high cell density Trench technology
- ●SOT-223 package design

➢ SOT-223



➢ Application

- ●Motor and Load Control
- ●Power Management in White LED System
- ●Push Pull Converter
- ●LCD TV Inverter & AD/DC Inverter Systems.

➢ Absolute Maximum Ratings

Parameter		Symbol	Maximum Ratings	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25℃	I_D	3.3	A
	T_A=70℃		2.6	
Pulsed Drain Current		I_{DM}	13	A
Maximum Power Dissipation	T_A=25℃	P_D	2.9	W
	T_A=70℃		1.9	
Operating Junction Temperature		T_J	150	℃
Storage Temperature Range		Tstg	-55 to 150	℃
Thermal Resistance-Junction to Ambient		$R_{\theta JA}$	42	℃/W

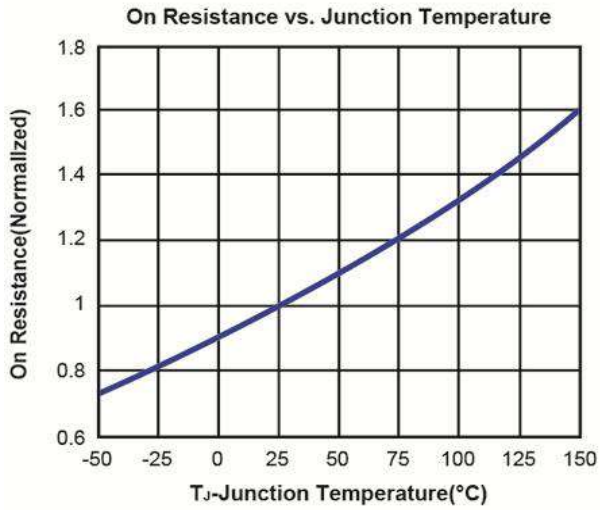
*The device mounted on 1in^2 FR4 board with 2 oz copper

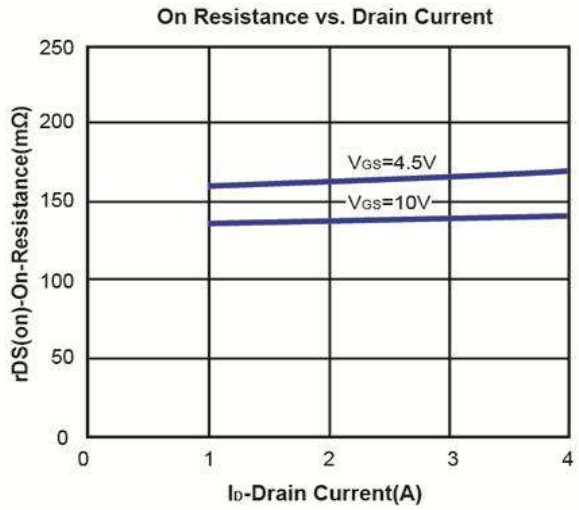
➢ Electrical Characteristics (T_J=25°C Unless otherwise noted)

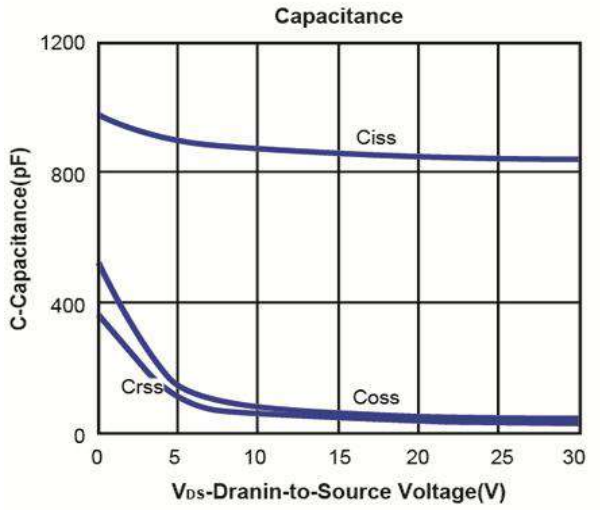
Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
$V_{BR(DSS)}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	100			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	1.0		3.0	V
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±20V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=80V, V_{GS}=0V			1	μA
$R_{DS(ON)}$	Drain-Source On-Resistance[a]	V_{GS}=10V, I_D= 3A		140	166	mΩ
		V_{GS}=4.5V, I_D=2.4A		165	213	
V_{SD}	Diode Forward Voltage	I_S=2.5A, V_{GS}=0V		0.8	1.2	V
DYNAMIC						
Qg	Total Gate Charge	V_{DS}=80V, V_{GS}=10V, I_D=2.5A		19.2		nC
Qg	Total Gate Charge	V_{DS}=80V, V_{GS}=4.5V, I_D=2.5A		11.2		
Qgs	Gate-Source Charge			3.4		
Qgd	Gate-Drain Charge			6.1		
Ciss	Input capacitance	V_{DS}=15V, V_{GS}=0V, f=1.0MHz		849		pF
Coss	Output Capacitance			57		
Crss	Reverse Transfer Capacitance			44		
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=50V, R_L=10Ω V_{GS}=10V, R_G=6Ω I_D=5A		12.6		ns
t_r	Turn-On Rise Time			6		
$t_{d(off)}$	Turn-Off Delay Time			32.5		
t_f	Turn-Off Fall Time			4.3		

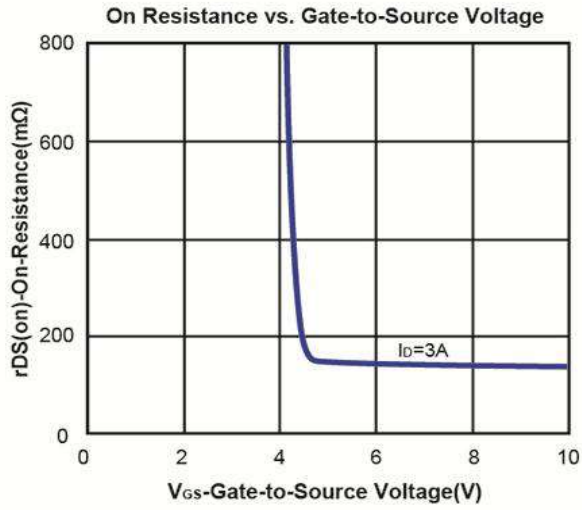
Notes: a. Pulse test: pulse width≦ 300us, duty cycle≦ 2%, Guaranteed by design, not subject to production testing.

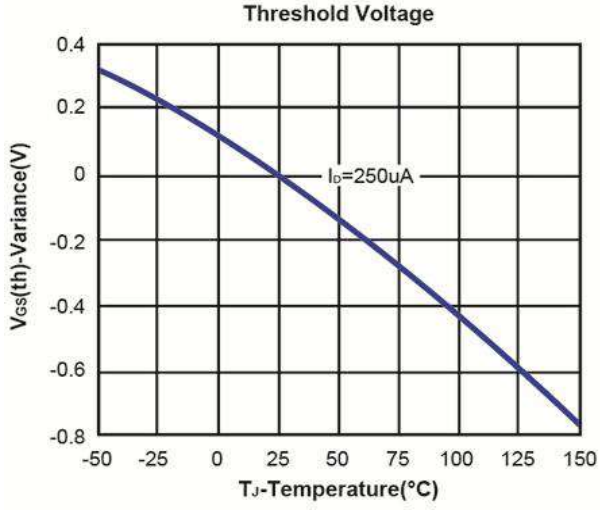
➢ Typical Characteristics

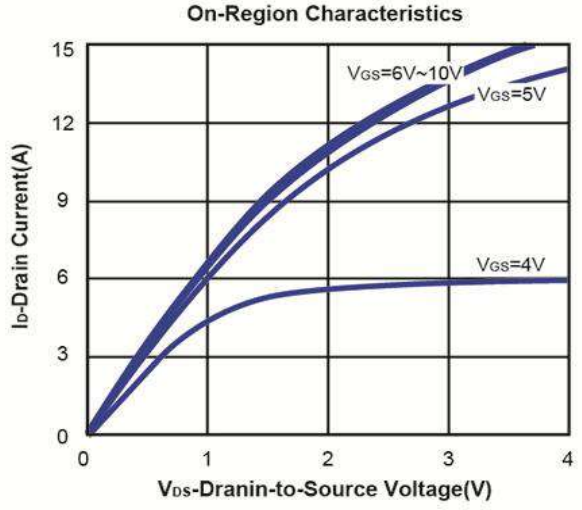




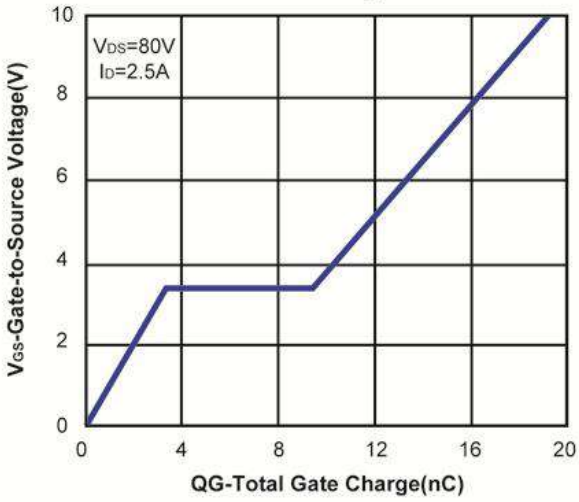




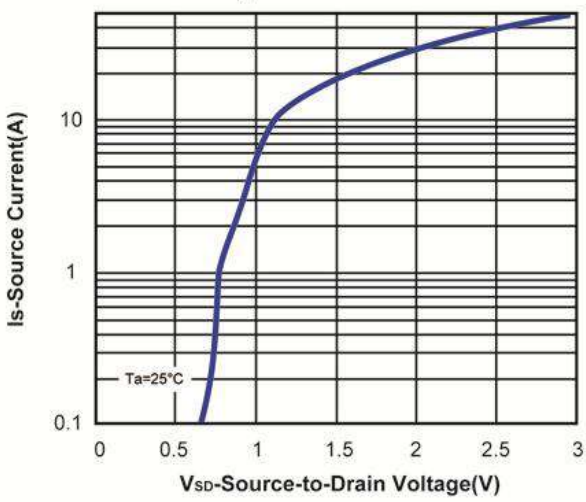




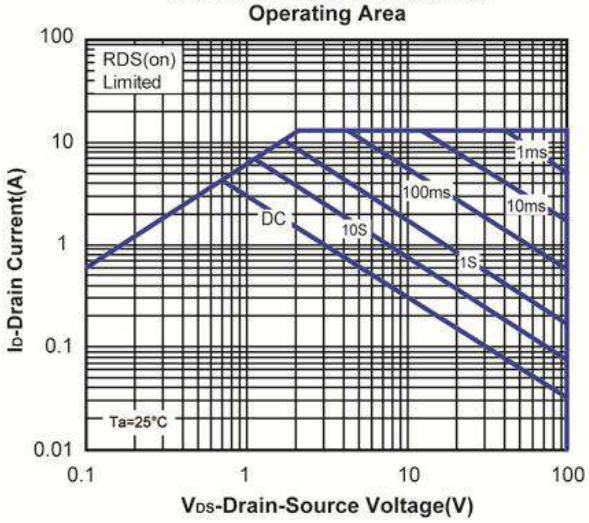
Gate Charge



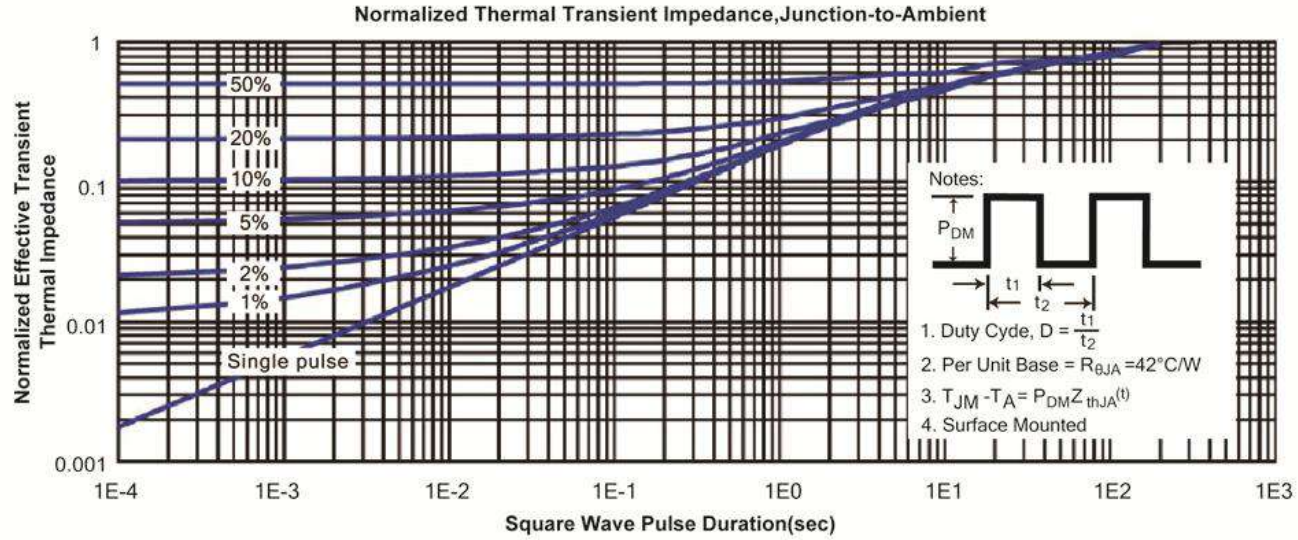
Body-diode characteristics



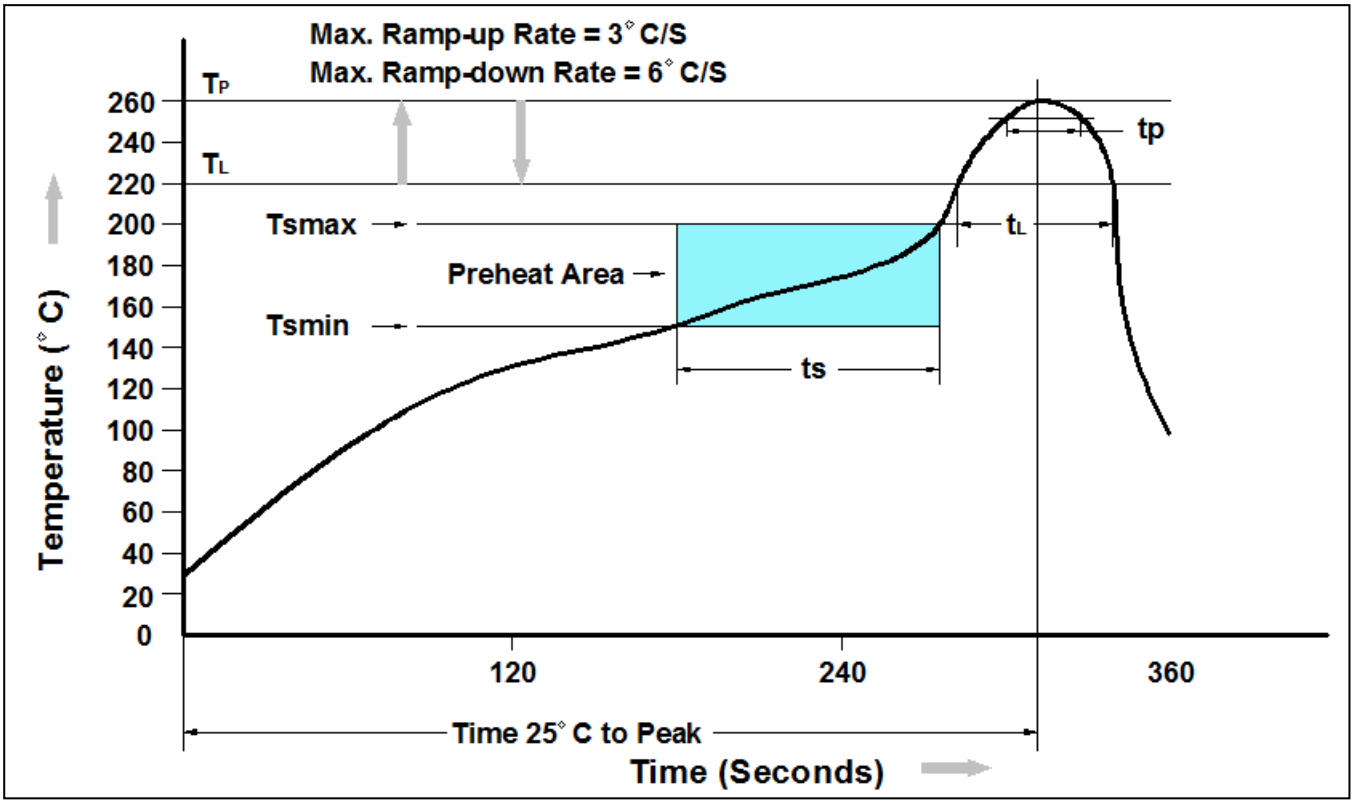
Maximum Forward Biased Safe Operating Area



Normalized Thermal Transient Impedance,Junction-to-Ambient



➢ Recommand IR Reflow Soldering Thermal Profile

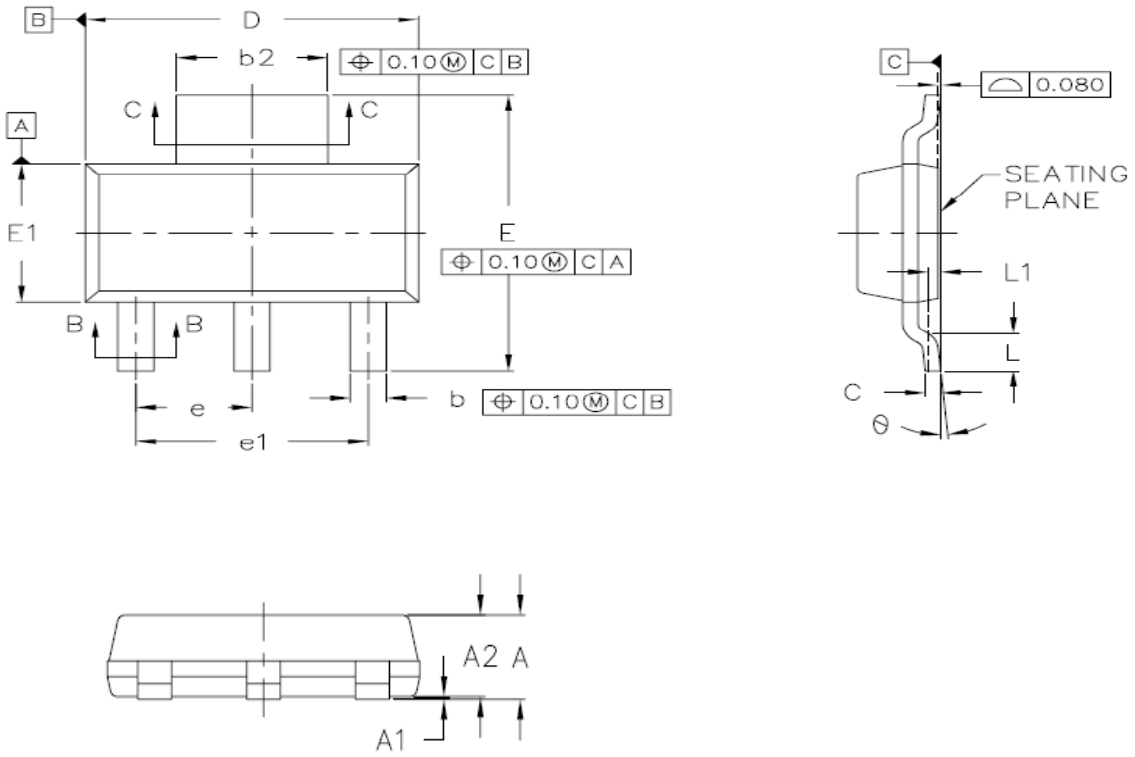


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (Tsmin to Tsmax)	60-120 seconds
Average Ramp-up Rate (tL to tP)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Temperature	260°C +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
PAN26TB14QB	SOT-223 Reel	3000 pcs

➢ Package Information (SOT-223)



SYMBOLS	COMMON			
	MM		INCH	
	MIN.	MAX.	MIN.	MAX.
A	——	1.80	——	0.071
A1	0.02	0.10	0.001	0.004
A2	1.50	1.70	0.059	0.067
b	0.66	0.84	0.026	0.033
b1	0.60	0.79	0.024	0.031
b2	2.90	3.10	0.114	0.122
b3	2.84	3.05	0.112	0.120
c	0.23	0.35	0.009	0.014
c1	0.23	0.33	0.009	0.013
D	6.30	6.70	0.248	0.264
E	6.70	7.30	0.264	0.287
E1	3.30	3.70	0.130	0.146
e	2.30 BSC.		0.091 BSC.	
e1	4.60 BSC.		0.182 BSC.	
L	0.81	——	0.032	——
L1	0.25 BSC.		0.010 BSC.	
θ	0°	10°	0°	10°

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