

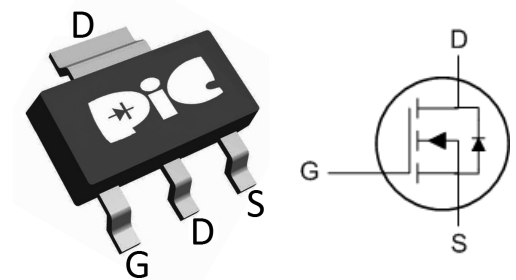
### ➤ General Description

This PAN26TB14QB N-Channel enhancement mode power field effect transistor is the high density trench technology and this advanced technology can provide excellent  $R_{ds(On)}$  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

- 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	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	$T_A=25^\circ C$	3.3
		$T_A=70^\circ C$	2.6
Pulsed Drain Current	$I_{DM}$	13	A
Maximum Power Dissipation	$P_D$	$T_A=25^\circ C$	2.9
		$T_A=70^\circ C$	1.9
Operating Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55 to 150	$^\circ C$
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	42	$^\circ C/W$

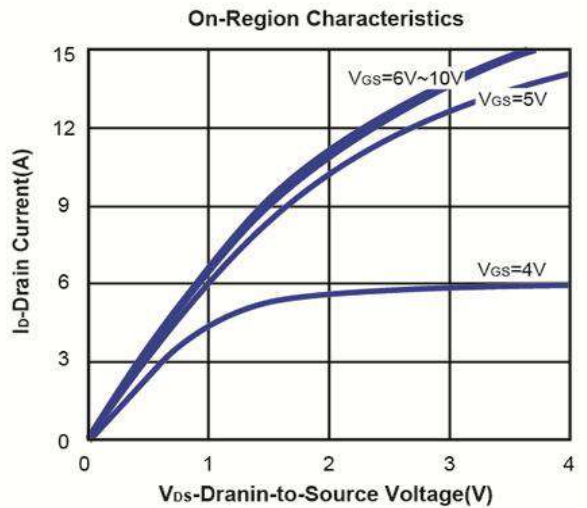
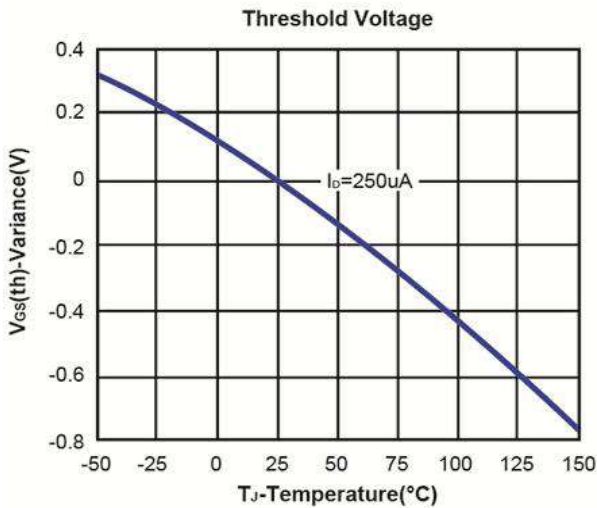
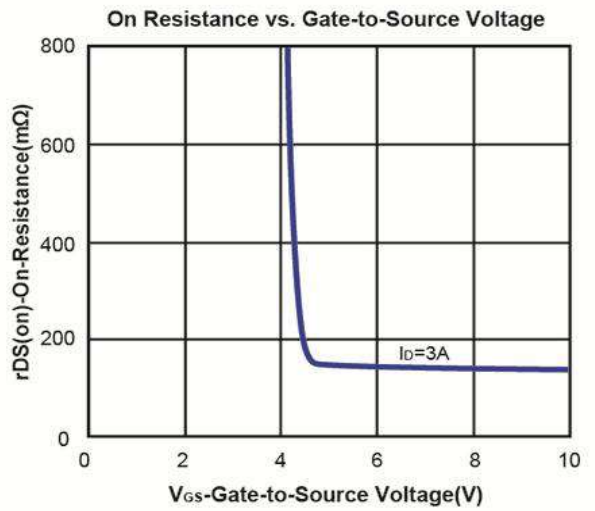
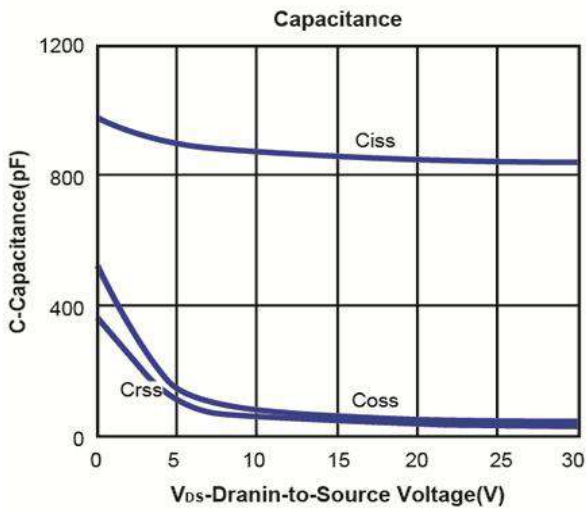
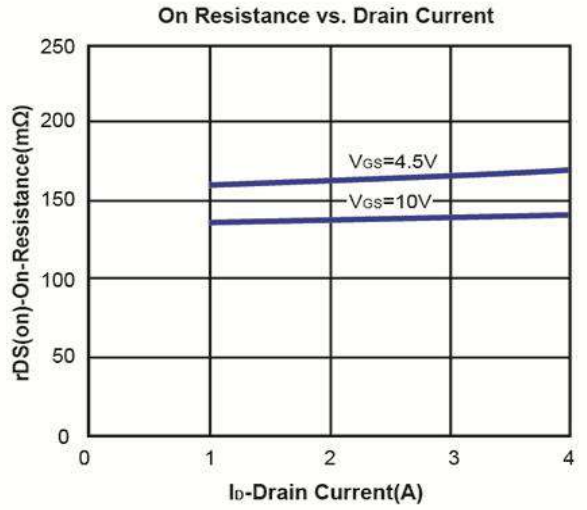
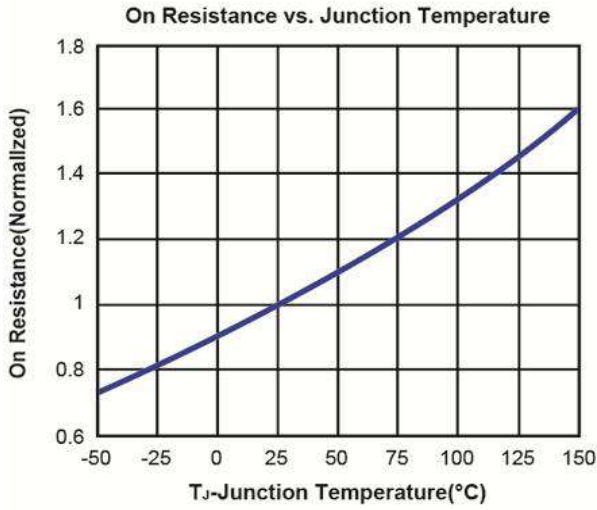
\*The device mounted on 1in<sup>2</sup> FR4 board with 2 oz copper

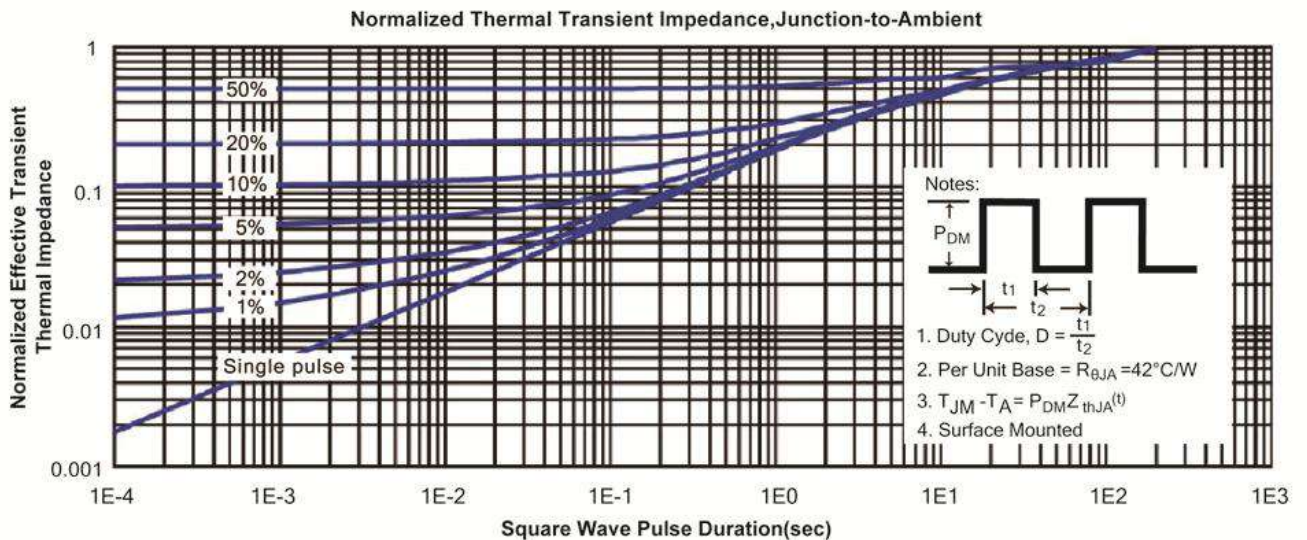
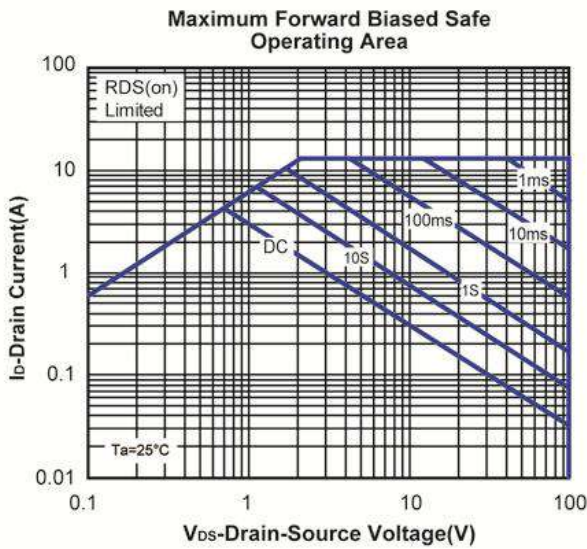
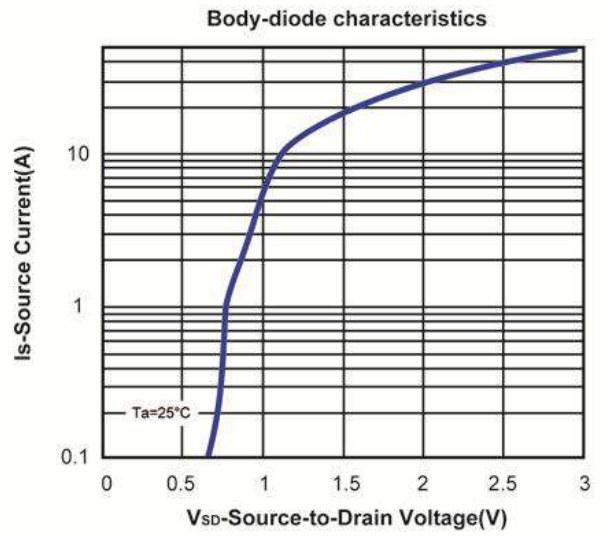
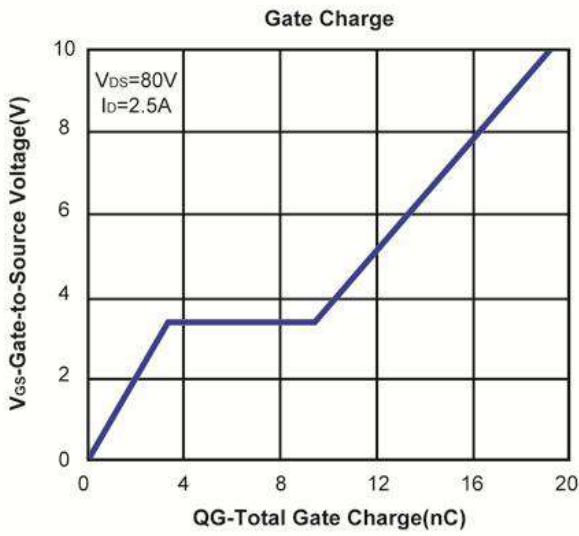
### ➤ Electrical Characteristics ( $T_J=25^\circ C$ Unless otherwise noted)

Symbol	Parameter	Limit	Min	Typ	Max	Unit
<b>STATIC</b>						
$V_{BR(DSS)}$	Drain-Source Breakdown Voltage	$V_{GS}=0V$ , $I_D=250 \mu A$	100			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}$ , $I_D=250 \mu A$	1.0		3.0	V
$I_{GSS}$	Gate Leakage Current	$V_{DS}=0V$ , $V_{GS}=\pm 20V$			$\pm 100$	nA
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=80V$ , $V_{GS}=0V$			1	$\mu A$
$R_{DS(ON)}$	Drain-Source On-Resistance <sup>a</sup>	$V_{GS}=10V$ , $I_D=3A$		140	166	m $\Omega$
		$V_{GS}=4.5V$ , $I_D=2.4A$		165	213	
$V_{SD}$	Diode Forward Voltage	$I_S=2.5A$ , $V_{GS}=0V$		0.8	1.2	V
<b>DYNAMIC</b>						
$Q_g$	Total Gate Charge	$V_{DS}=80V$ , $V_{GS}=10V$ , $I_D=2.5A$		19.2		nC
$Q_g$	Total Gate Charge	$V_{DS}=80V$ , $V_{GS}=4.5V$ , $I_D=2.5A$		11.2		
$Q_{gs}$	Gate-Source Charge			3.4		
$Q_{gd}$	Gate-Drain Charge			6.1		
$C_{iss}$	Input capacitance	$V_{DS}=15V$ , $V_{GS}=0V$ , $f=1.0MHz$		849		pF
$C_{oss}$	Output Capacitance			57		
$C_{rss}$	Reverse Transfer Capacitance			44		
$t_{d(on)}$	Turn-On Delay Time	$V_{DS}=50V$ , $R_L=10\Omega$ $V_{GS}=10V$ , $R_G=6\Omega$ $I_D=5A$		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  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ , Guaranteed by design, not subject to production testing.

## ➤ Typical Characteristics





## ➤ Recommand IR Reflow Soldering Thermal Profile

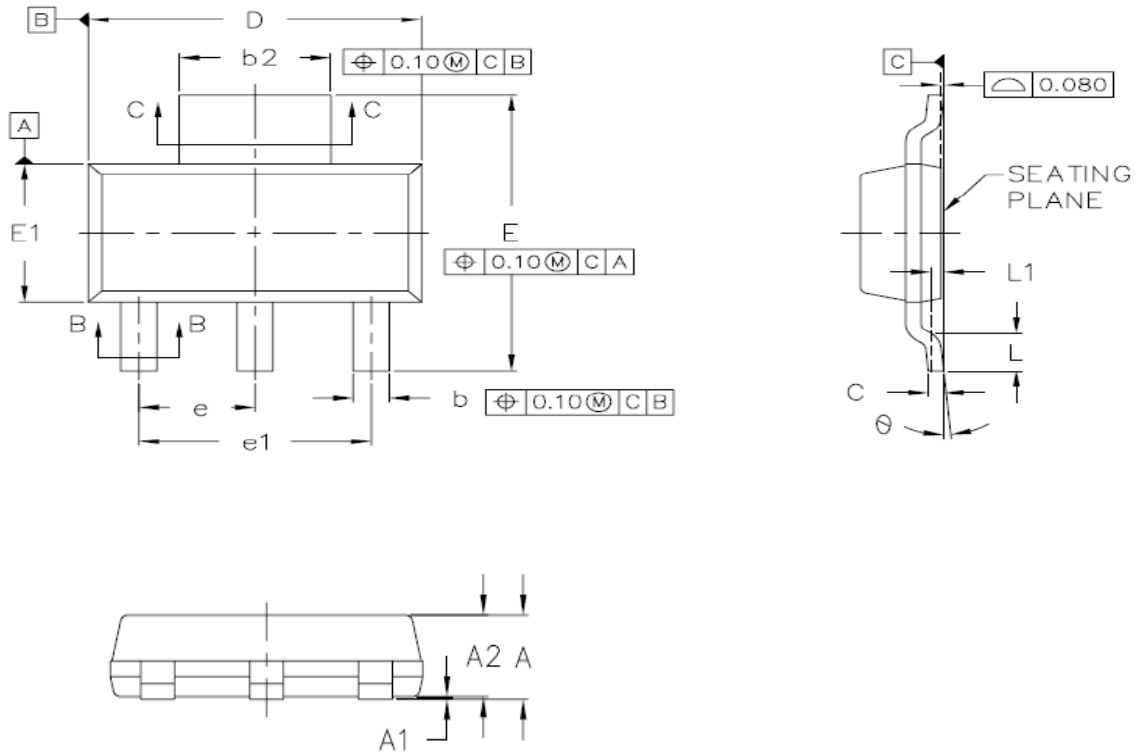


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T <sub>smin</sub> )	150°C
Temperature Max. (T <sub>smax</sub> )	200°C
Time (t <sub>s</sub> ) from (T <sub>smin</sub> to T <sub>smax</sub> )	60-120 seconds
Average Ramp-up Rate (t <sub>L</sub> to t <sub>P</sub> )	3°C/second max.
Liquidous Temperature (T <sub>L</sub> )	217°C
Time (t <sub>L</sub> ) Maintained Above (T <sub>L</sub> )	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time (t <sub>P</sub> ) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate (T <sub>P</sub> to T <sub>L</sub> )	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 )



DIMENSIONS	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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