

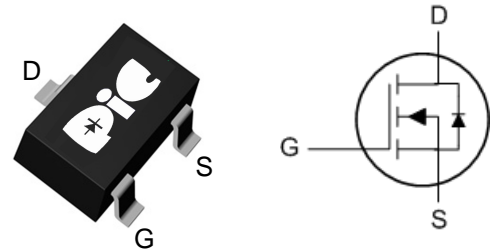
➤ General Description

This PAN7002B 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

- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability
- SOT-523 package design

➤ SOT-523



➤ Application

- Load Switch for Portable Devices
- DC/DC Converter

➤ Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	20	V
Continuous Drain Current	I_D	0.115	A
Power Dissipation	P_D	0.200	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{stg}	-50 ~+150	

➤ **Electrical Characteristics ($T_A=25^\circ C$ Unless otherwise specified)**

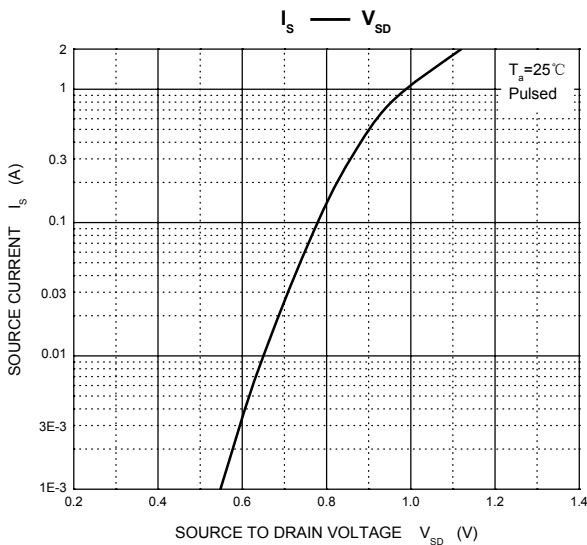
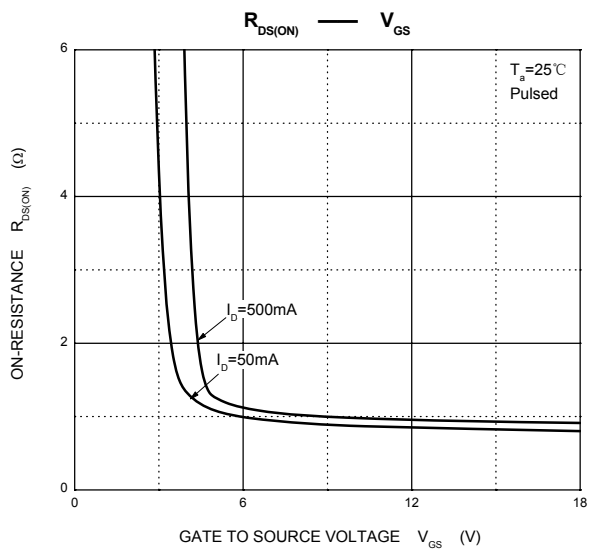
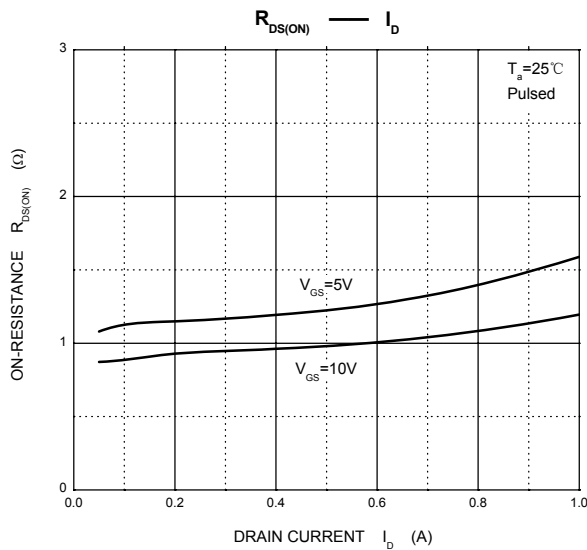
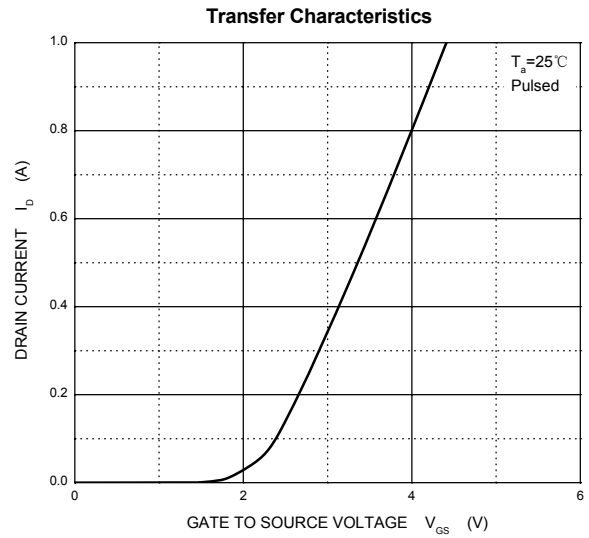
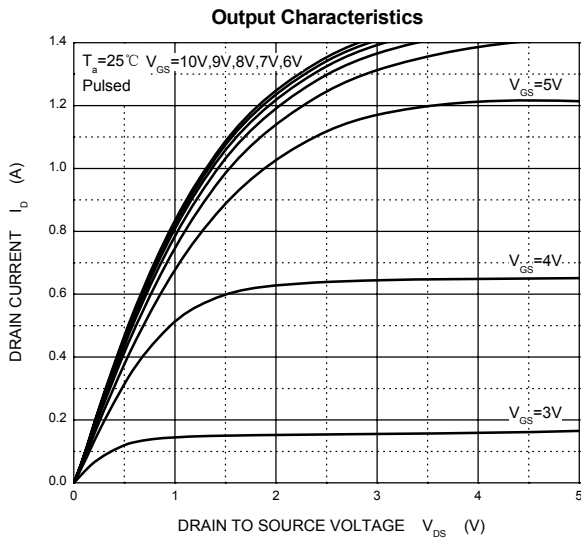
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V$, $I_D=250\mu A$	60			V
Gate-Threshold Voltage	$V_{(GS)th}$	$V_{DS}=V_{GS}$, $I_D=250\mu A$	1	1.6	2.5	
Gate-body Leakage	I_{GSS}	$V_{DS}=0V$, $V_{GS}=\pm 20V$			± 80	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V$, $V_{GS}=0V$			80	nA
On-state Drain Current	$I_{D(on)}$	$V_{GS}=10V$, $V_{DS}=7V$	500			mA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$, $I_D=500mA$		0.9	5	Ω
		$V_{GS}=5V$, $I_D=50mA$		1.1	7	
Forward Trans conductance	g_{fs}	$V_{DS}=10V$, $I_D=200mA$	80			ms
Drain-source on-voltage	$V_{DS(on)}$	$V_{GS}=10V$, $I_D=500mA$			3.75	V
		$V_{GS}=5V$, $I_D=50mA$			0.375	V
Diode Forward Voltage	V_{SD}	$I_S=115mA$, $V_{GS}=0V$	0.55		1.2	V
Input Capacitance *	C_{iss}	$V_{DS}=25V$, $V_{GS}=0V$, $f=1MHz$			50	pF
Output Capacitance *	C_{oss}				25	
Reverse Transfer Capacitance*	C_{rss}				5	

➤ **Switching Time**

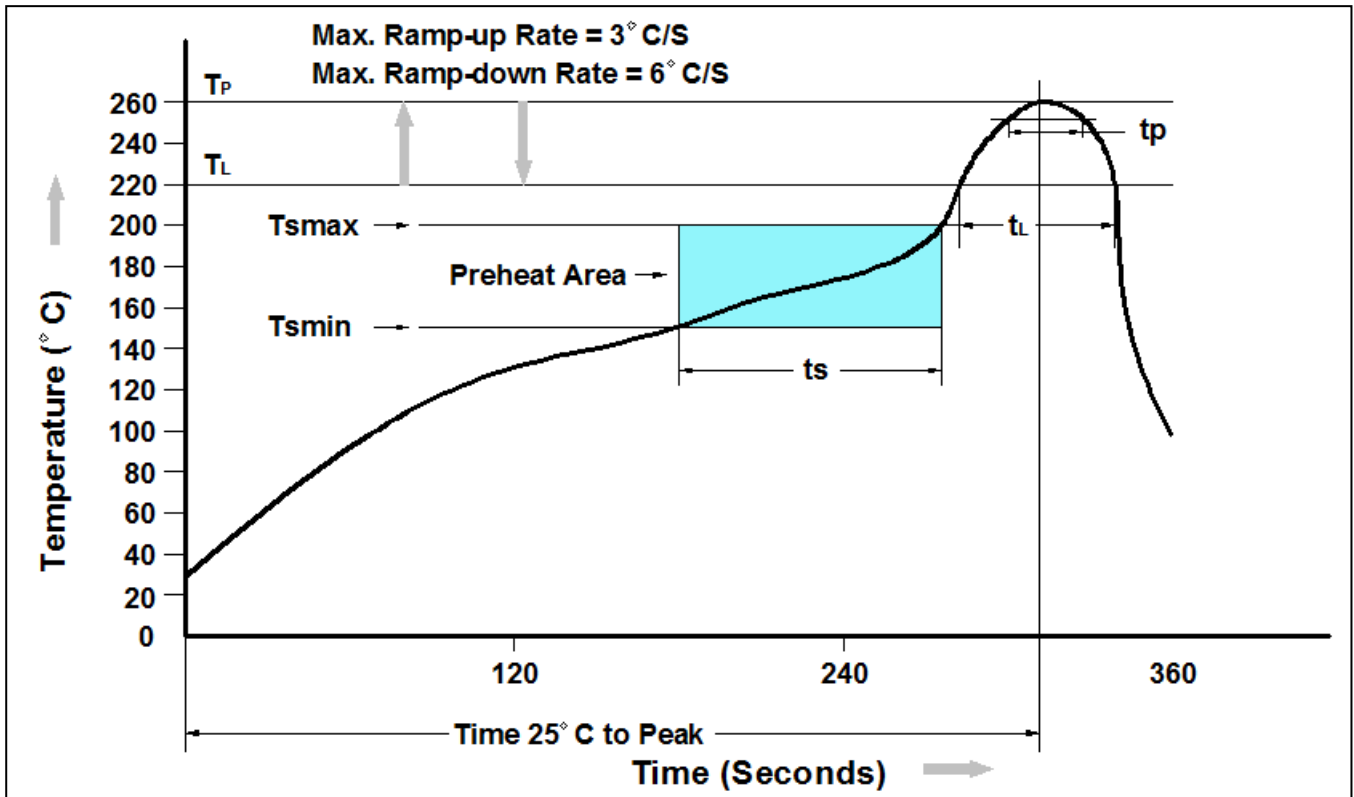
Turn-on Time*	$t_{d(on)}$	$V_{DD}=25V$, $R_L=50\Omega$, $I_D=500mA$, $V_{GEN}=10V$ $R_G=25\Omega$			20	ns
Turn-off Time*	$t_{d(off)}$				40	

*These parameters have no way to verify.

➤ Typical Characteristics



➤ Recommend IR Reflow Soldering Thermal Profile

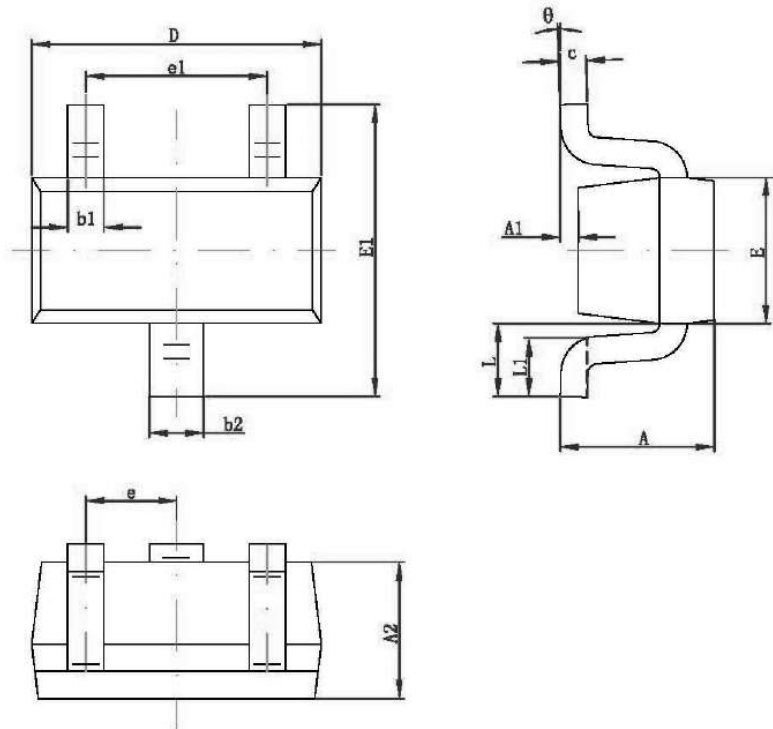


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T _{smin})	150°C
Temperature Max. (T _{smax})	200°C
Time (t _s) from (T _{smin} to T _{smax})	60-120 seconds
Average Ramp-up Rate (t _L to t _P)	3°C/second max.
Liquidous Temperature (T _L)	217°C
Time (t _L) Maintained Above (T _L)	60 – 150 seconds
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
PAN7002B	SOT-523 Reel	3000 pcs

➤ Package Information (SOT-523)



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

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