

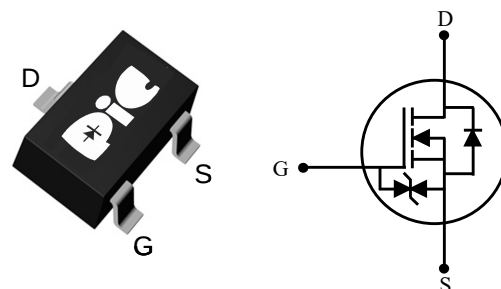
➤ General Description

This PAN6032ER 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

- Low on resistance $R_{DS(ON)}$
- Low gate threshold voltage
- Low input capacitance
- ESD protected
- SOT-323 package design

➤ SOT-323



➤ Application

- Portable Equipment
- Battery Powered System
- Net Working System

➤ Maximum Ratings ($T_A=25^{\circ}C$ Unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	0.32	A
Pulsed Drain Current (Note 1)	I_{DM}	1.2	A
Power Dissipation	P_D	0.31 0.26	W
Thermal Resistance from Junction to Ambient (Note 2) (Note 3)	$R_{\theta JA}$	403 480	$^{\circ}C/W$
Operating and Storage Temperature Range	T_J, T_{stg}	- 55 to + 150	$^{\circ}C$

Note :

1. Pulse Test: Pulse Width $\leq 100\mu s$, Duty Cycle $\leq 2\%$, Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}=150^{\circ}C$.
2. Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch² copper plate.
3. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

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

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Static						
Drain Source Breakdown Voltage	I _D =250μA	V _{(BR)DSS}	60	-	-	V
Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	V _{GS(th)}	0.48	-	1.60	V
Zero Gate Voltage Drain Current	V _{DS} =60V	I _{DSS}	-	-	1	μA
Gate-Body Leakage Current	V _{GS} =±20V	I _{GSS}	-	-	±10	μA
	V _{GS} =±10V		-	-	±1	
Drain-Source On-State Resistance	V _{GS} =10V, I _D =0.32A	R _{DS(on)}	-	-	1.6	Ω
	V _{GS} =4.5V, I _D =0.20A		-	-	2.2	
	V _{GS} =2.5V, I _D =0.01A		-	-	6.5	
Dynamic						
Forward Transfer Admittance	V _{DS} =10V, I _D =0.2A	g _{fs}	-	470	-	mS
Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	R _g	-	54	-	Ω
Total Gate Charge	V _{DS} =25V, I _D =1A, V _{GS} =4.5V	Q _g	-	0.85	-	nC
			-	1.30	-	
Gate-Source Charge	V _{DS} =25V, I _D =1A, V _{GS} =10V	Q _{gs}	-	0.45	-	
Gate-Drain Charge		Q _{gd}	-	0.30	-	
Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	C _{iss}	-	35.0	-	pF
Output Capacitance		C _{oss}	-	10.0	-	
Reverse Transfer Capacitance		C _{rss}	-	8.5	-	
Turn-On Delay Time	V _{DS} =30V, V _{GS} =10V, I _D =0.5A, R _g =25Ω	t _{d(on)}	-	5.4	-	ns
Turn-On Rise Time		t _r	-	3.0	-	
Turn-Off Delay Time		t _{d(off)}	-	6.0	-	
Turn-Off Fall Time		t _f	-	30.0	-	
Drain-Source Body Diode						
Drain-Source Diode Forward Voltage	I _S =0.3A	V _{SD}	0.47	-	1.20	V
Diode Continuous Source Current	-	I _S	-	-	0.32	A
Reverse Recovery Time	I _S =0.5A, di/dt=100A/μs	t _{rr}	-	42	-	ns
Reverse Recovery Charge		Q _{rr}	-	41	-	nC

➤ Typical Characteristics

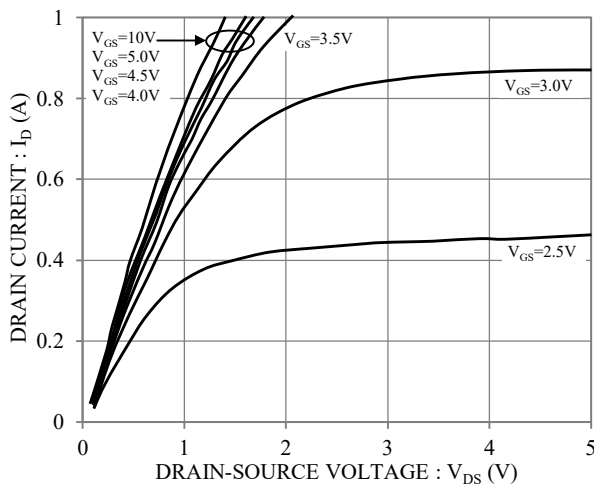


Fig.1 Typical Output Characteristics

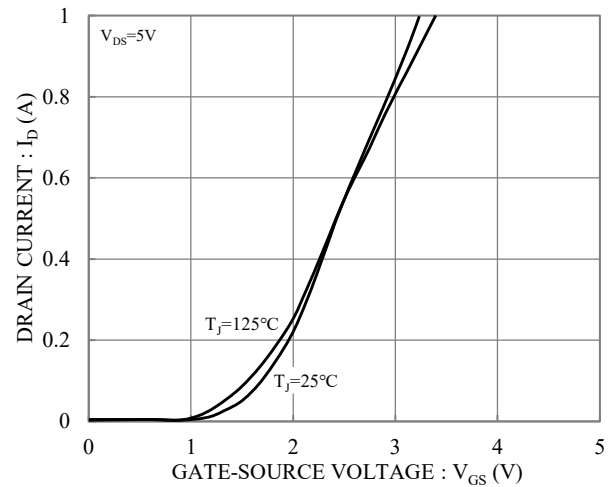


Fig.2 Typical Transfer Characteristics

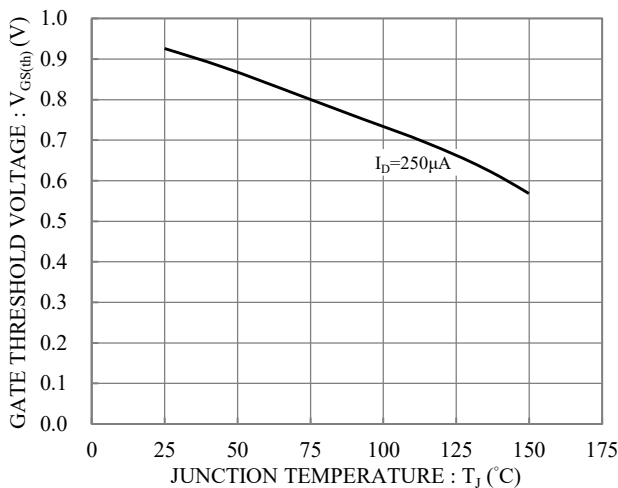


Fig.3 Gate Threshold Voltage vs. Junction Temperature

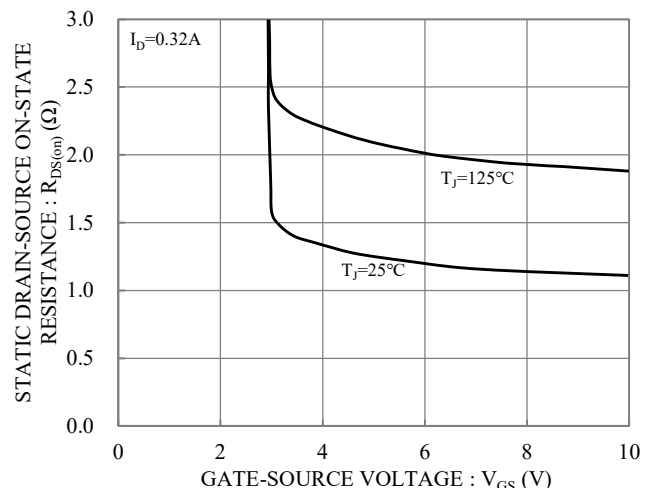


Fig.4 Static Drain-Source On-State Resistance vs. Gate-Source Voltage

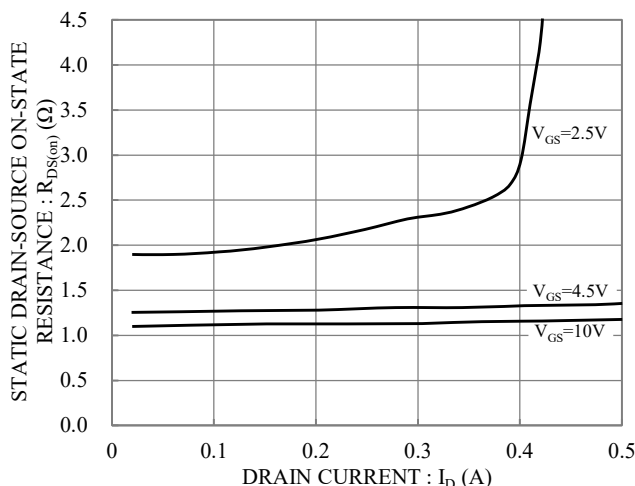


Fig.5 Static Drain-Source On-State Resistance vs. Drain Current

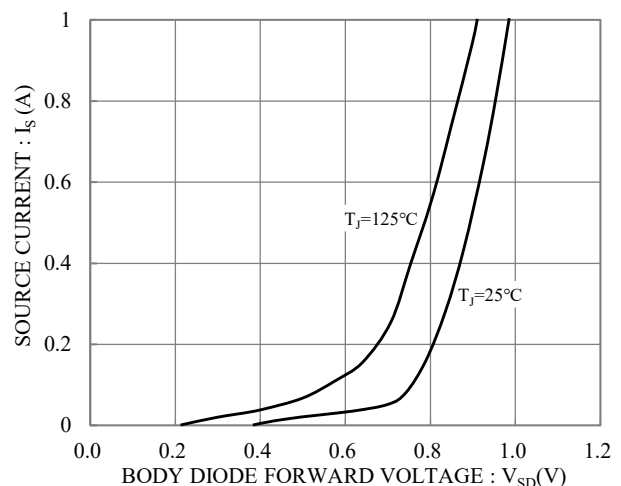


Fig.6 Body Diode Forward Voltage vs. Source Current

➤ Typical Characteristics

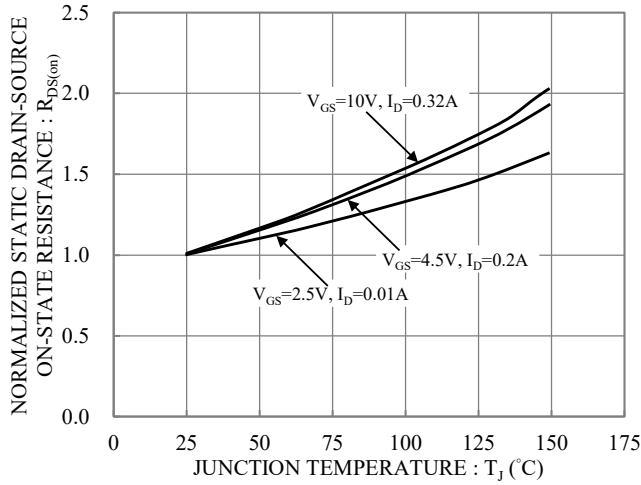


Fig.7 Drain-Source On-State Resistance vs. Junction Temperature

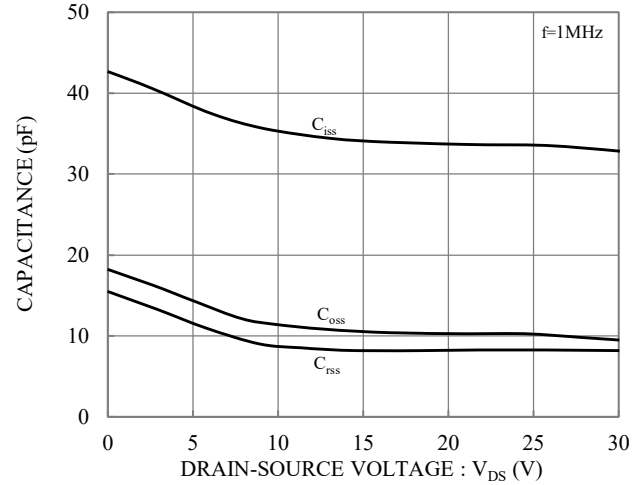


Fig.8 Capacitance vs. Drain-Source Voltage

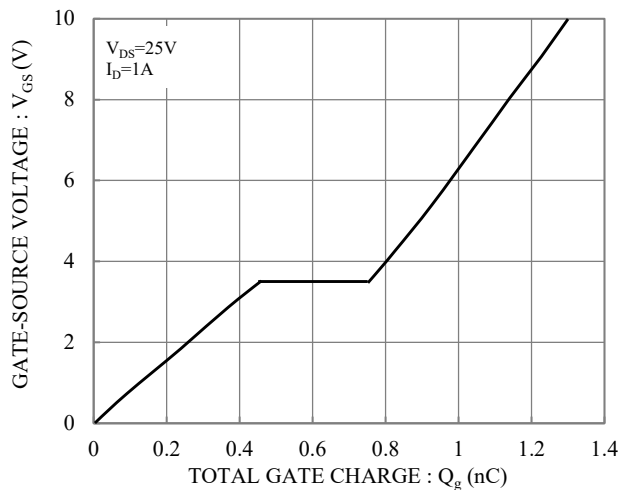


Fig.9 Gate Charge

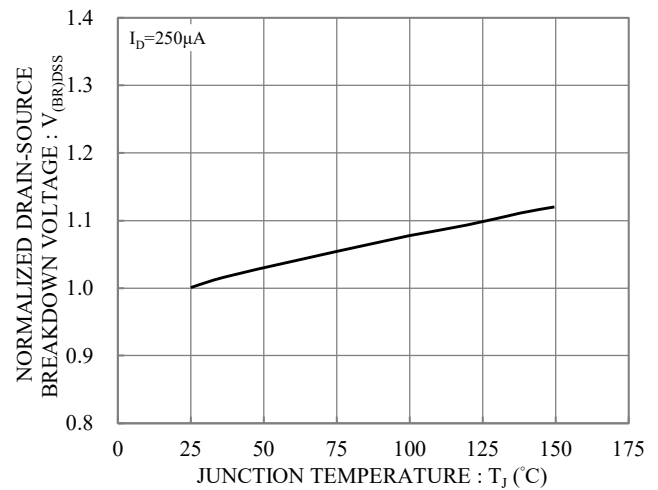
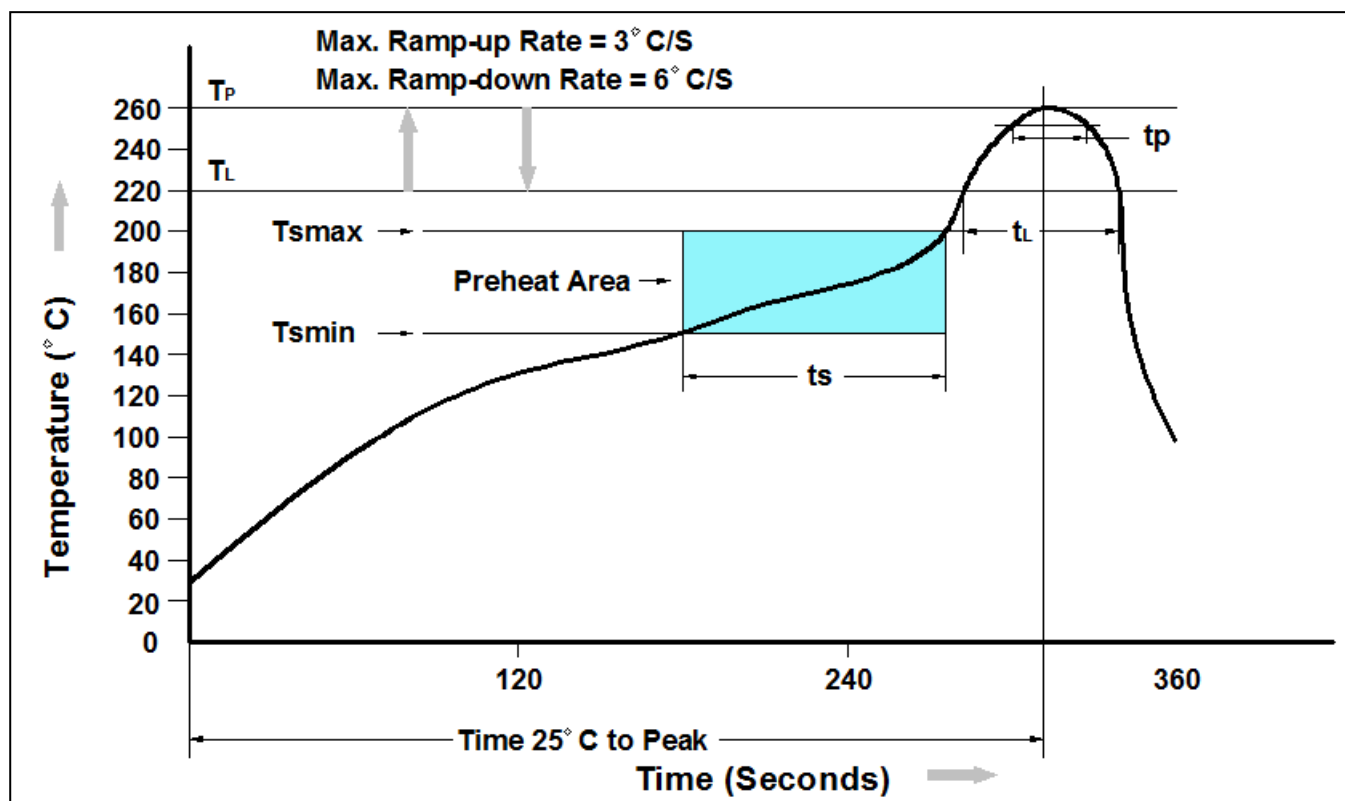


Fig.10 Breakdown Voltage vs. Junction Temperature

➤ Recommend IR Reflow Soldering Thermal Profile

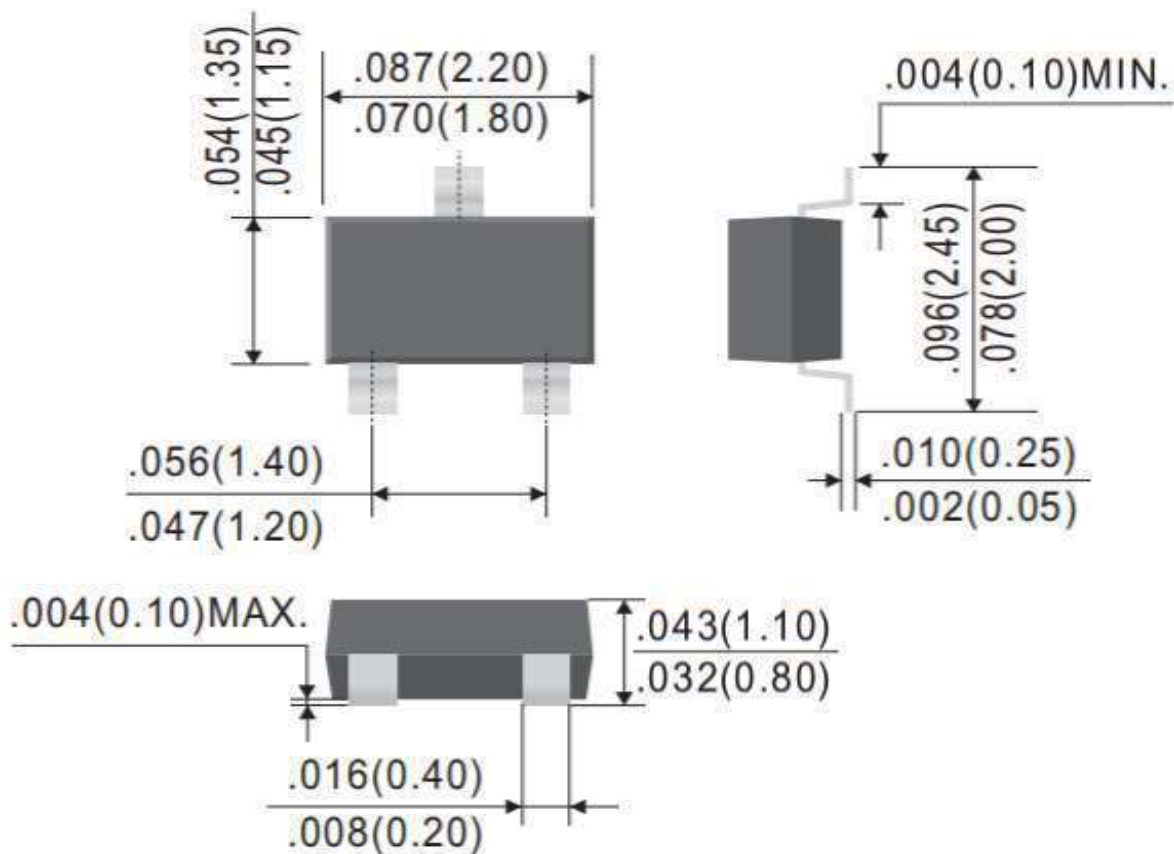


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T _{smin})	150°C
Temperature Max. (T _{smax})	200°C
Time (ts) from (T _{smin} to T _{smax})	60-120 seconds
Average Ramp-up Rate (t _L to t _P)	3°C/second max.
Liquidous Temperature (T _L)	217°C
Time (t _L) Maintained Above (T _L)	60 – 150 seconds
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
PAN6032ER	SOT-323 Reel	3000 pcs

➤ Package Information (SOT-323)



Dimensions in inch and (millimeter)

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