

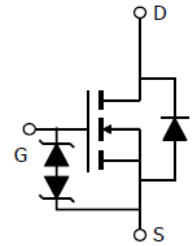
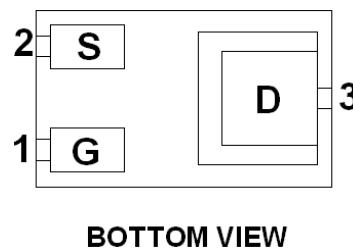
### ➤ General Description

This PAN2007EDN 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 Offset (Error) Voltage
- Low-Voltage Operation
- High-Speed Circuits
- ESD Protection
- Low Battery Voltage Operation

### ➤ DFN1.0X0.6-3L



### ➤ Application

- Drivers: Relays, Solenoids, Lamps, Hammers, Displays, Memories
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Smart Phones, Pagers

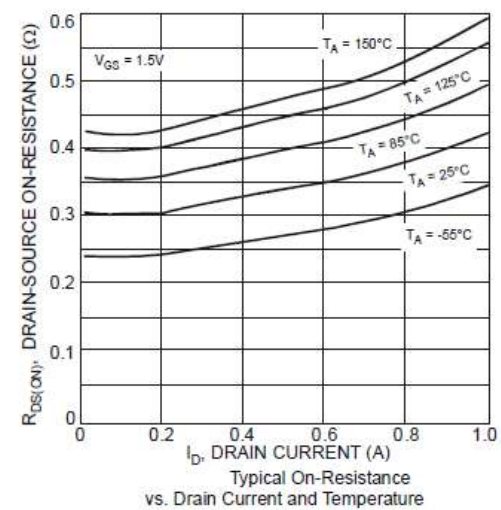
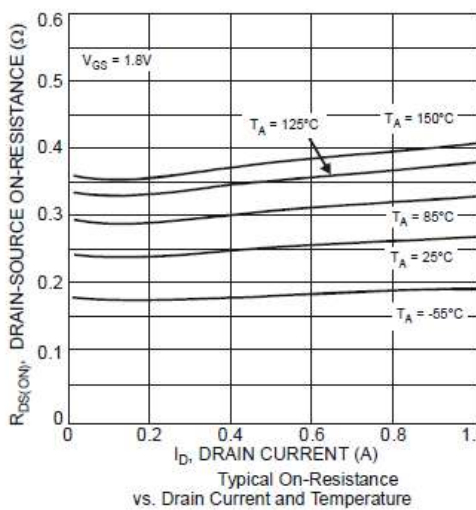
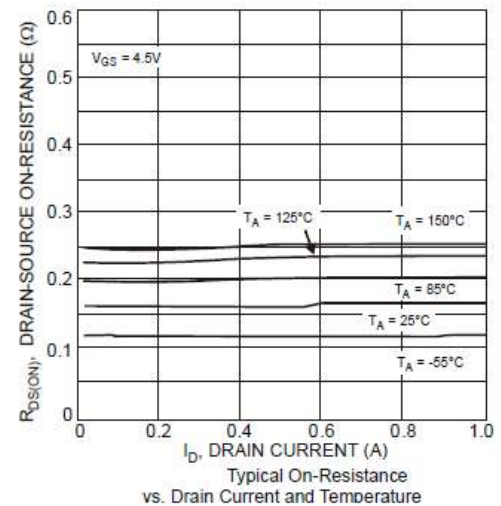
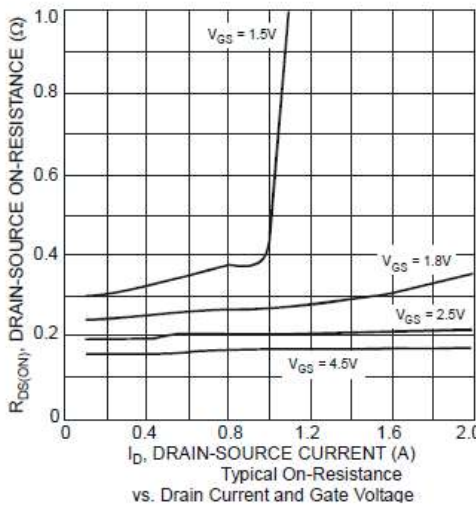
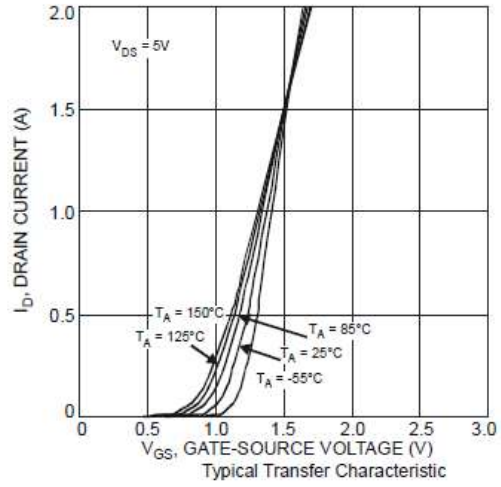
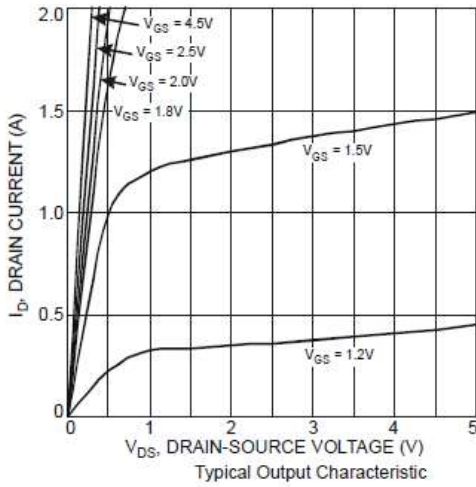
### ➤ Absolute Maximum Ratings

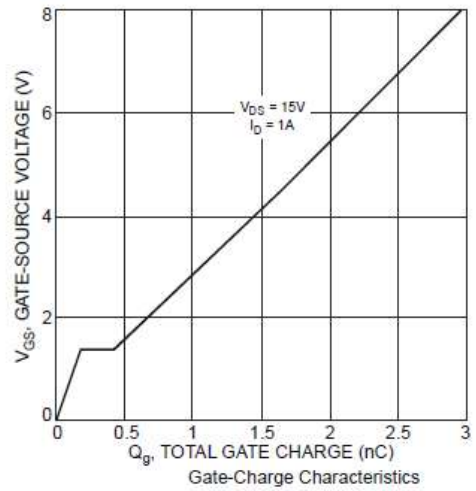
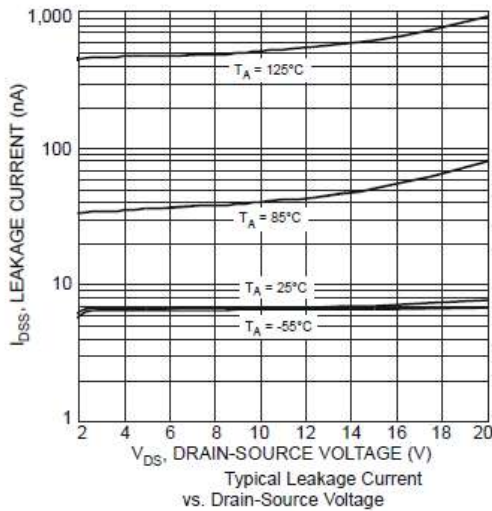
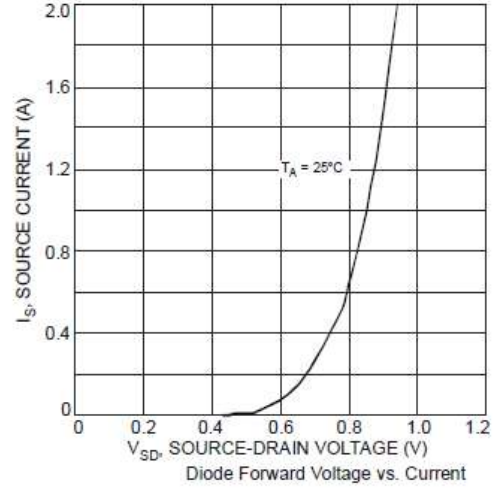
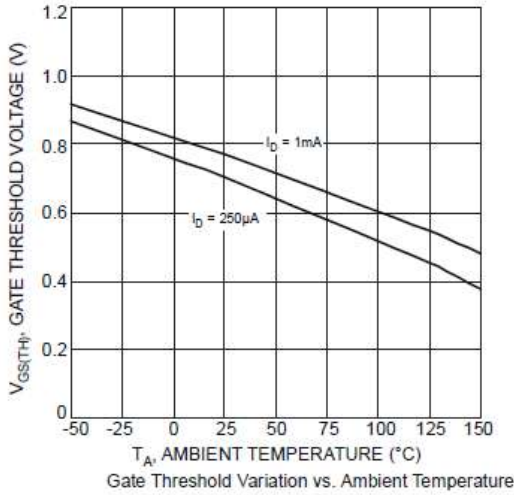
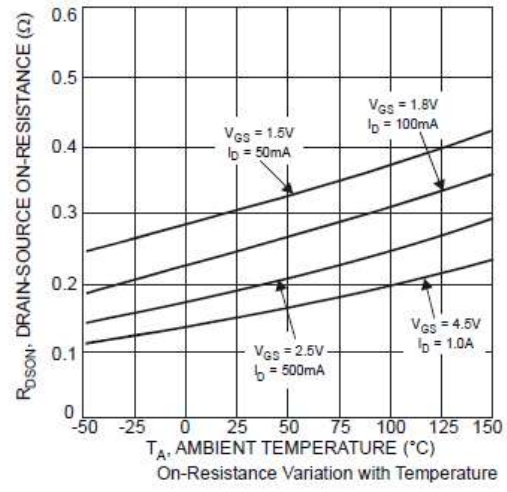
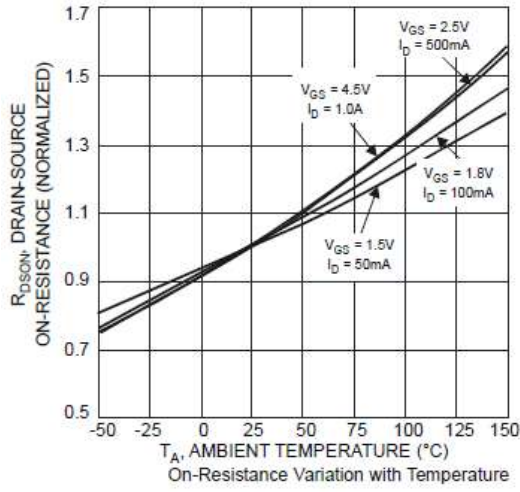
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DSS}$	20	V
Gate –Source Voltage	$V_{GSS}$	$\pm 12$	V
Continuous Drain Current( $T_J=150^\circ C$ )	$I_D$	$T_A=25^\circ C$	0.7
		$T_A=70^\circ C$	0.4
Pulsed Drain Current	$I_{DM}$	1.0	A
Continuous Source Current(Diode Conduction)	$I_S$	0.3	A
Power Dissipation	$P_D$	$T_A=25^\circ C$	0.27
		$T_A=70^\circ C$	0.16
Operating Junction Temperature	$T_J$	-55/150	$^\circ C$
Storage Temperature Range	$T_{STG}$	-55/150	$^\circ C$

➤ **Electrical Characteristics (T<sub>A</sub>=25°C Unless otherwise noted)**

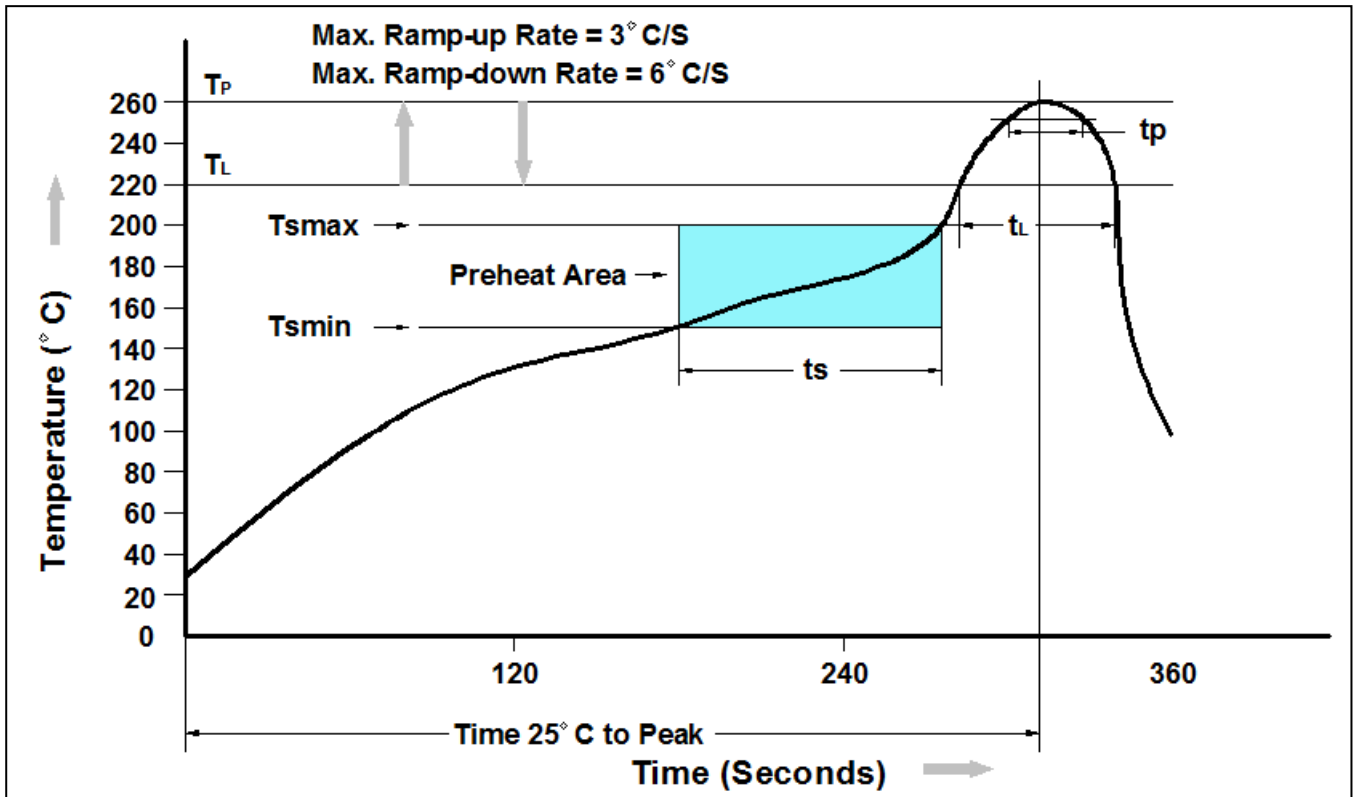
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.3		1.0	
Gate Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 12V$			$\pm 1$	mA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=20V, V_{GS}=0V$			1	uA
		$V_{DS}=20V, V_{GS}=0V$ $T_J=85^\circ C$			5	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq 5V, V_{GS}=4.5V$	0.7			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=0.8A$		240	360	mΩ
		$V_{GS}=2.5V, I_D=0.7A$		300	420	
		$V_{GS}=1.8V, I_D=0.5A$		420	560	
Forward Transconductance	$g_{FS}$	$V_{DS}=10V, I_D=0.4A$		1		S
Diode Forward Voltage	$V_{SD}$	$I_S=0.15A, V_{GS}=0V$		0.65	1.2	V
<b>Dynamic</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=10V, V_{GS}=0V$ $f=1MHz$		70		pF
Output Capacitance	$C_{oss}$			8		
Reverse Transfer Capacitance	$C_{rss}$			6		
Total Gate Charge	$Q_g$	$V_{DS}=10V, V_{GS}=4.5V$ $I_D=0.6A$		1.06	1.38	nC
Gate-Source Charge	$Q_{gs}$			0.18		
Gate-Drain Charge	$Q_{gd}$			0.32		
Turn-On Time	$t_{d(on)}$	$V_{DD}=10V, R_L=20\Omega$ $I_D=0.8A, V_{GEN}=10V$ $R_G=6\Omega$		5	10	ns
	$t_r$			5	10	
Turn-Off Time	$t_{d(off)}$			35	70	
	$t_f$			15	30	

### ➤ Typical Characteristics





➤ Recommend IR Reflow Soldering Thermal Profile

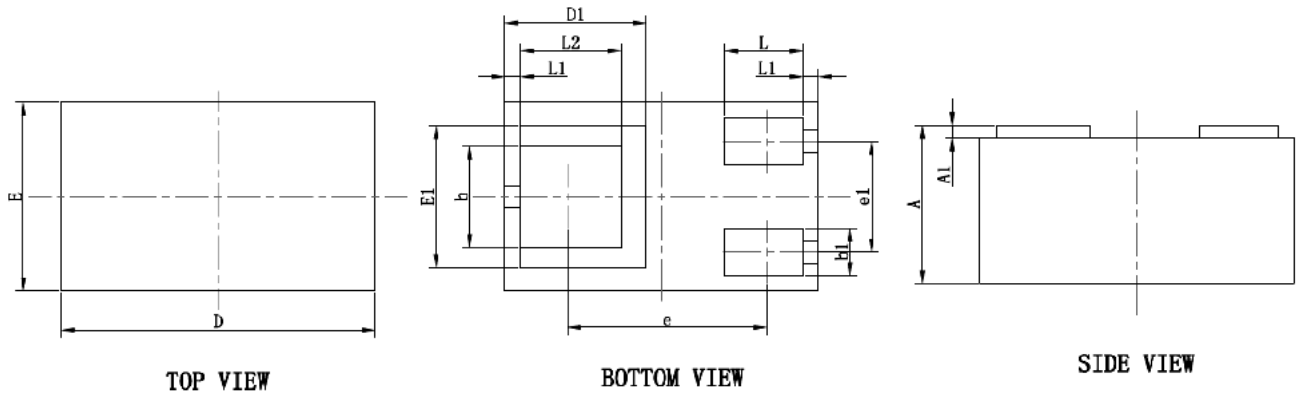


Profile Feature	Pb-Free Assembly Profile
Temperature Min. ( $T_{smin}$ )	150°C
Temperature Max. ( $T_{smax}$ )	200°C
Time ( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )	60-120 seconds
Average Ramp-up Rate ( $t_L$ to $t_P$ )	3°C/second max.
Liquidous Temperature ( $T_L$ )	217°C
Time ( $t_L$ ) Maintained 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
PAN2007EDN	DFN1.0X0.6-3L Reel	10,000 pcs

➤ Package Information (DFN1.0X0.6-3L)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.010	0.100	0.000	0.004
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
D1	0.450REF.		0.018REF.	
E1	0.450REF.		0.018REF.	
b	0.270	0.370	0.011	0.015
b1	0.100	0.200	0.004	0.008
e	0.635REF.		0.025REF.	
e1	0.300	0.400	0.012	0.016
L	0.200	0.300	0.008	0.012
L1	0.050REF.		0.002REF.	
L2	0.270	0.370	0.011	0.015

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