

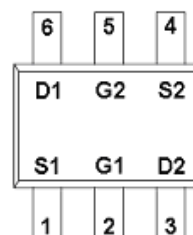
➤ General Description

This PAN7002EH Dual 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

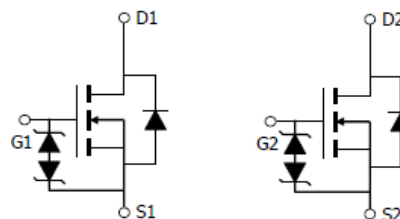
- Low Offset (Error) Voltage
- Low-Voltage Operation
- High-Speed Circuits
- ESD (1KV) Protected
- Low Battery Voltage Operation
- SOT-363 package design

➤ SOT-363



➤ Application

- Drivers: Relays, Solenoids, Lamps, Hammers, Displays, Memories
- Battery Operated Systems
- Load/Power Switching Smart Phones, Pagers
- PA Switch
- Level Switch



➤ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	60	V
Gate –Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current($T_J=150^\circ C$)	I_D	$T_A=25^\circ C$ 0.64	A
		$T_A=70^\circ C$ 0.35	
Pulsed Drain Current	I_{DM}	0.8	A
Continuous Source Current(Diode Conduction)	I_S	0.64	A
Power Dissipation	P_D	$T_A=25^\circ C$ 0.3	W
		$T_A=70^\circ C$ 0.2	
Operating Junction Temperature	T_J	-55/150	$^\circ C$
Storage Temperature Range	T_{STG}	-55/150	$^\circ C$

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

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		2.0	
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 1	mA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			1	uA
		$V_{DS}=60V, V_{GS}=0V$ $T_J=125^\circ C$			500	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq 2V, V_{GS}=10V$	0.5			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=0.5A$		1900	3000	m Ω
		$V_{GS}=5V, I_D=0.3A$		2400	4000	
Forward Transconductance	g_{FS}	$V_{DS}=2V, I_D=0.2A$	0.08			S
Diode Forward Voltage	V_{SD}	$I_S=0.115A, V_{GS}=0V$			1.5	V
Dynamic						
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V$ $f=1MHz$		17	50	pF
Output Capacitance	C_{oss}			10	25	
Reverse Transfer Capacitance	C_{rss}			3	5	
Turn-On Time	$t_{d(on)}$	$V_{DD}=25V, R_L=50\Omega$		7	20	ns
Turn-Off Time	$t_{d(off)}$	$I_D=0.5A, V_{GEN}=10V, R_G=25\Omega$		11	40	

➤ Typical Characteristics

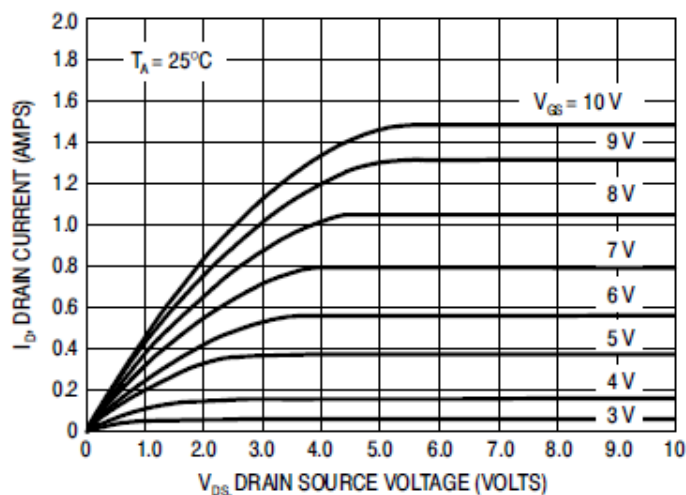


Figure 1. Ohmic Region

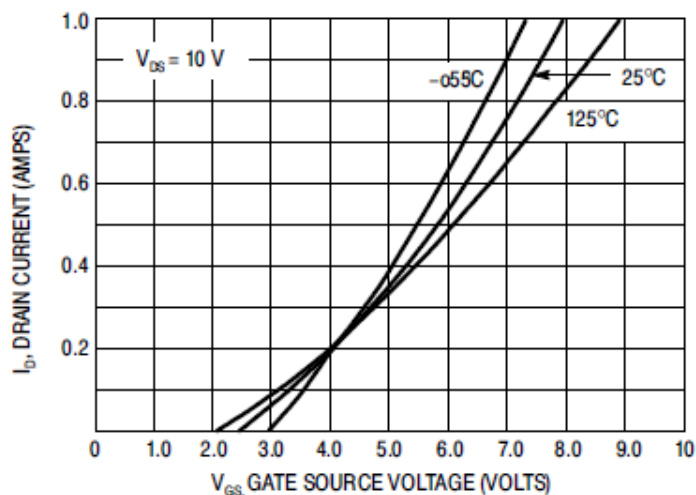


Figure 2. Transfer Characteristics

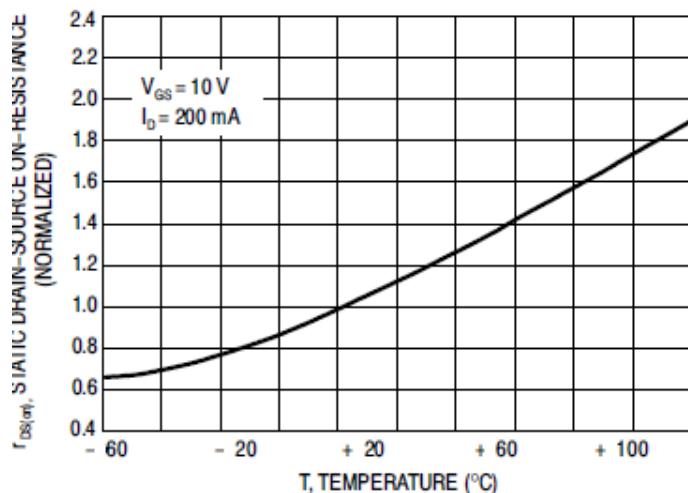


Figure 3. Temperature versus Static Drain-Source On-Resistance

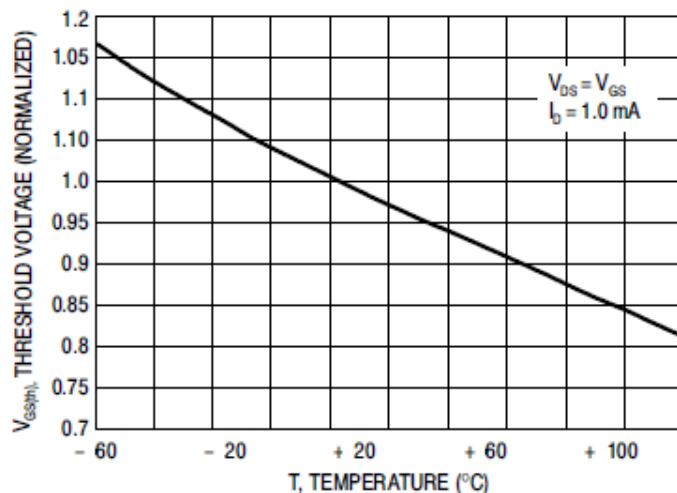
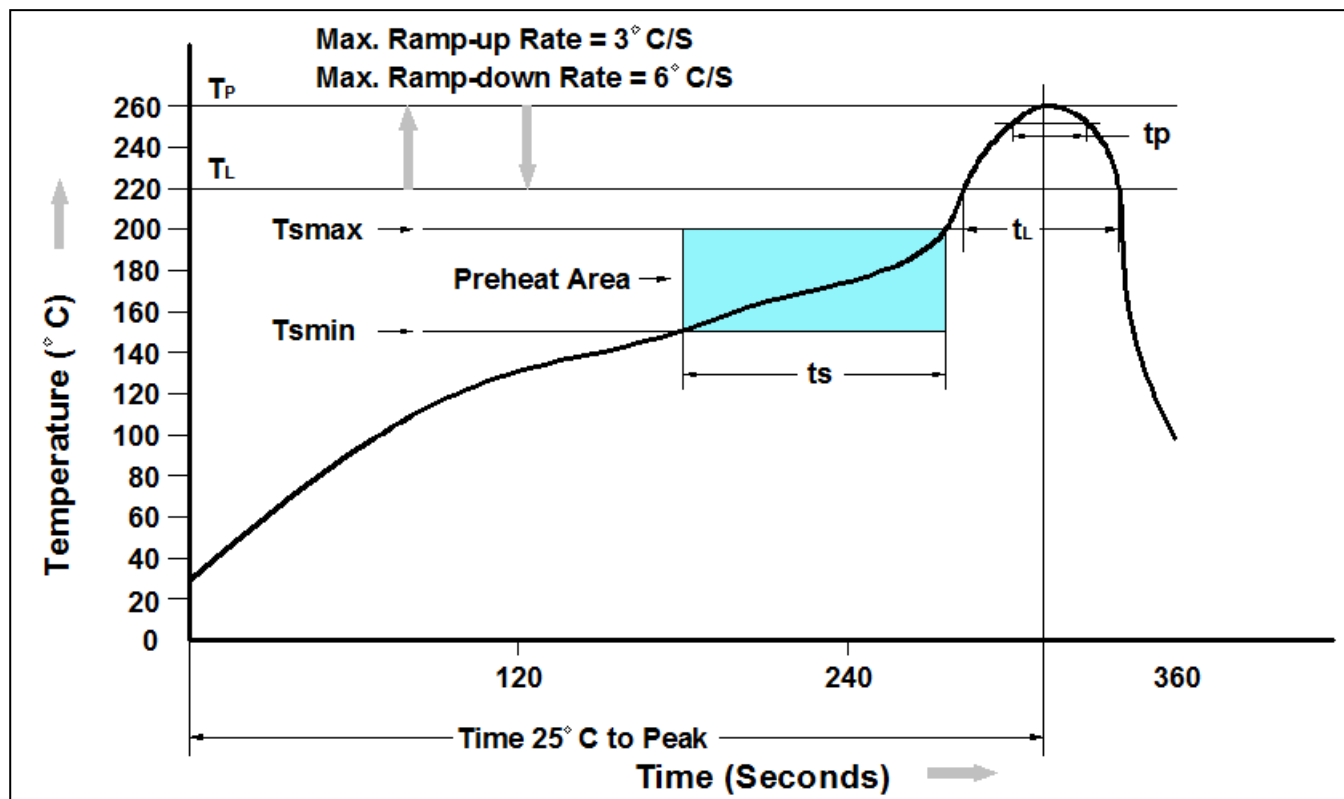


Figure 4. Temperature versus Gate Threshold Voltage

➤ Recommend IR Reflow Soldering Thermal Profile

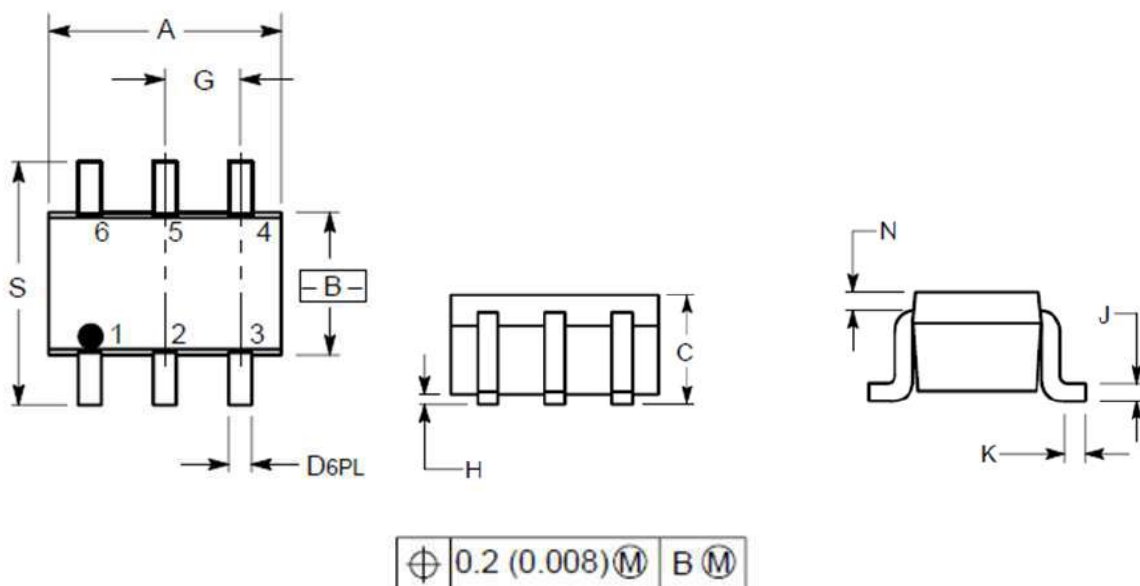


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T_{Smin})	150°C
Temperature Max. (T_{Smax})	200°C
Time (t_S) from (T_{Smin} to T_{Smax})	60-120 seconds
Average Ramp-up Rate (t_L to t_P)	3°C/second max.
Liquidous Temperature (T_L)	217°C
Time (t_L) Maintained Above (T_L)	60 – 150 seconds
Peak 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
PAN7002EH	SOT-363 Reel	3000 pcs

➤ Package Information (SOT-363)



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.031	0.043	0.80	1.10
D	0.004	0.012	0.10	0.30
G	0.026 BSC		0.65 BSC	
H	---	0.004	---	0.10
J	0.004	0.010	0.10	0.25
K	0.004	0.012	0.10	0.30
N	0.008 REF		0.20 REF	
S	0.079	0.087	2.00	2.20

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