

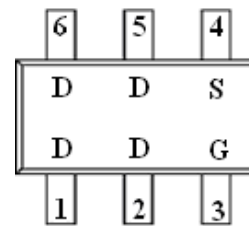
## ➤ General Description

This PAP2427H P-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

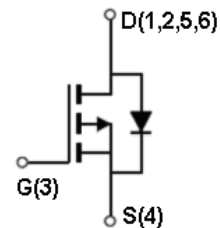
- Low Offset (Error) Voltage
- Low-Voltage Operation
- High-Speed Circuits
- Low Battery Voltage Operation
- SOT-363 package design

## ➤ SOT-363



## ➤ Application

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



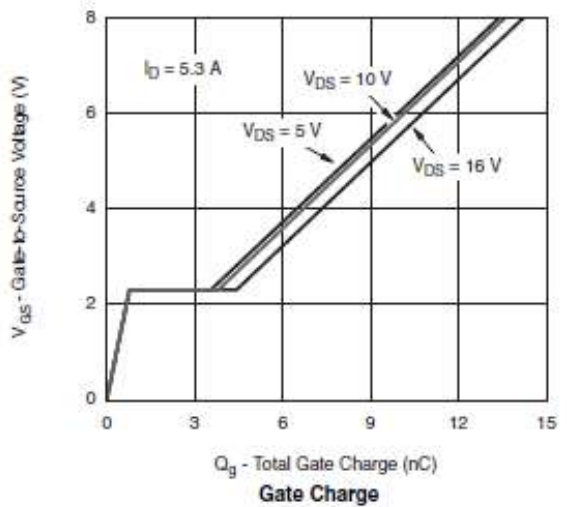
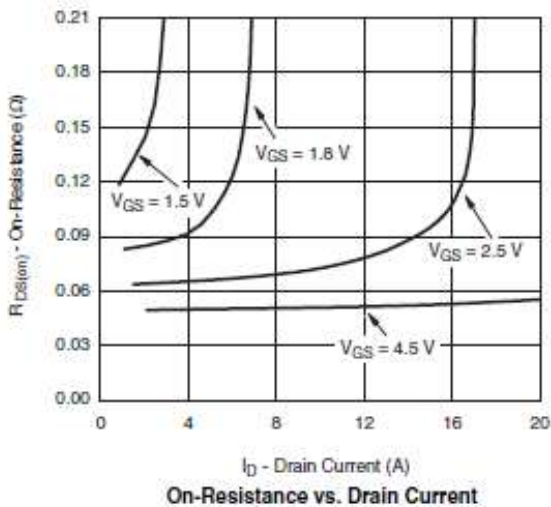
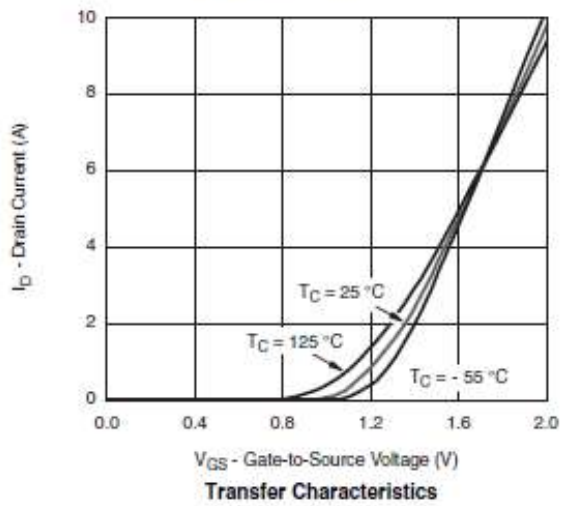
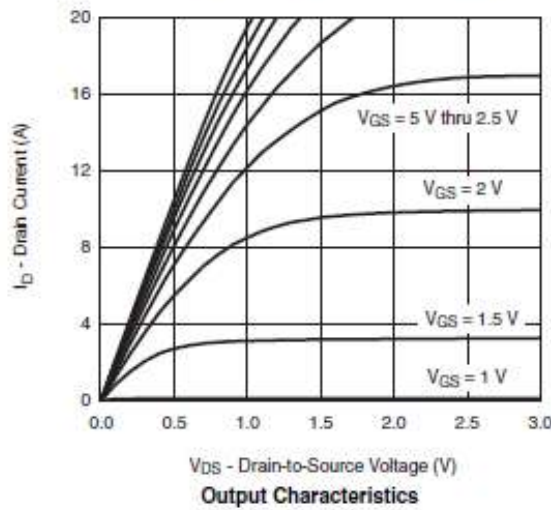
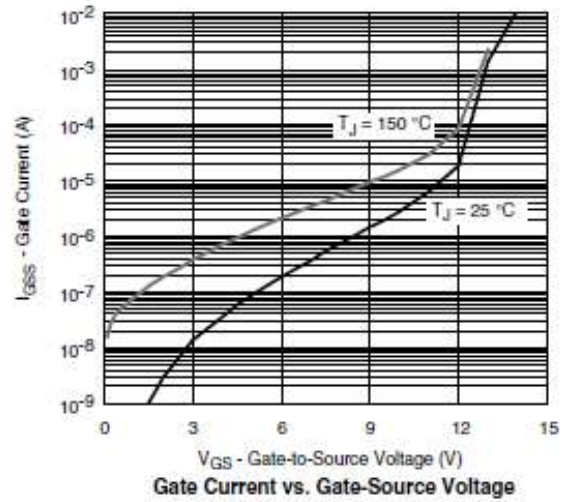
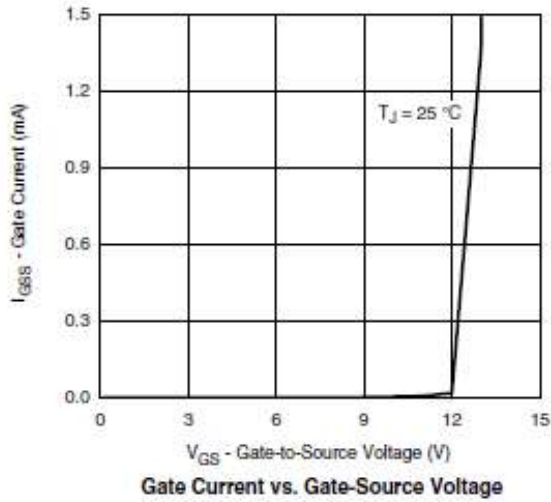
## ➤ Absolute Maximum Ratings

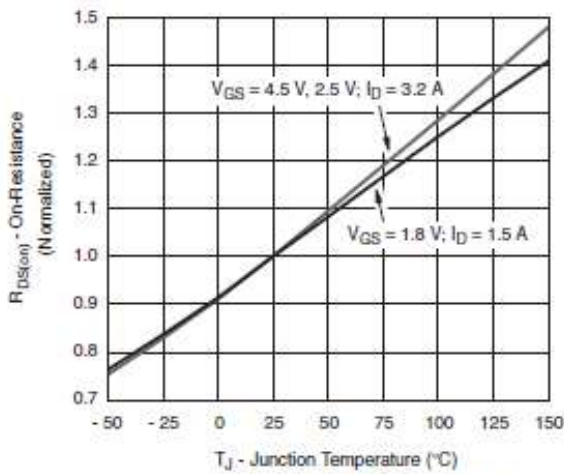
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DSS}$	-20	V
Gate -Source Voltage	$V_{GSS}$	$\pm 12$	V
Continuous Drain Current( $T_J=150^\circ C$ )	$I_D$	$T_A=25^\circ C$	-3.0
		$T_A=70^\circ C$	-2.0
Pulsed Drain Current	$I_{DM}$	-8	A
Continuous Source Current(Diode Conduction)	$I_S$	-1.4	A
Power Dissipation	$P_D$	$T_A=25^\circ C$	1.5
		$T_A=70^\circ C$	1.0
Operating Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature Range	$T_{STG}$	-55/150	$^\circ C$
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	120	$^\circ C/W$

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

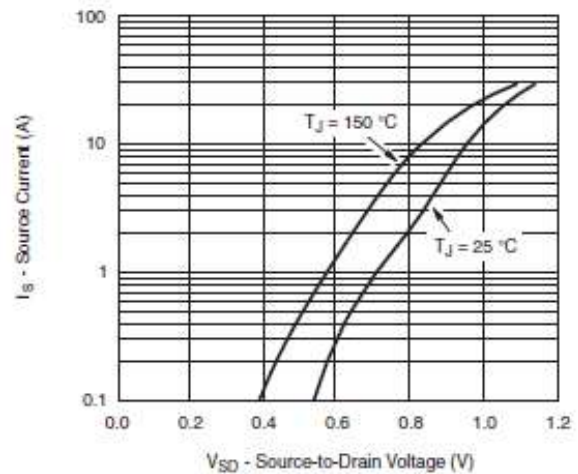
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4		-0.8	
Gate Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 12V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-16V, V_{GS}=0V$			-1	uA
		$V_{DS}=-16V, V_{GS}=0V$ $T_J=85^\circ C$			-10	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq -5V, V_{GS}=-4.5V$	-6			A
		$V_{DS} \geq -5V, V_{GS}=-2.5V$	-4			
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-4.0A$		38	48	m $\Omega$
		$V_{GS}=-2.5V, I_D=-3.2A$		48	58	
		$V_{GS}=-1.8V, I_D=-2.8A$		63	78	
Forward Transconductance	$g_{FS}$	$V_{DS}=-5V, I_D=-3.6A$		10		S
Diode Forward Voltage	$V_{SD}$	$I_S=-1.6A, V_{GS}=0V$		-0.85	-1.2	V
<b>Dynamic</b>						
Total Gate Charge	$Q_g$	$V_{DS}=-10V, V_{GS}=-4.5V$ $I_D \equiv -4.0A$		8.0	12	nC
Gate-Source Charge	$Q_{gs}$			0.9		
Gate-Drain Charge	$Q_{gd}$			3.0		
Input Capacitance	$C_{iss}$	$V_{DS}=-10V, V_{GS}=0V$ $f=1MHz$		780		pF
Output Capacitance	$C_{oss}$			115		
Reverse Transfer Capacitance	$C_{rss}$			55		
Turn-On Time	$t_{d(on)}$	$V_{DD}=-10V, R_L=2.3\Omega$ $I_D \equiv -4.0A, V_{GEN}=-4.5V$ $R_G=1\Omega$		0.2	0.3	us
	$t_r$			1.0	1.5	
Turn-Off Time	$t_{d(off)}$			4.0	6.0	
	$t_f$			2.0	3.0	

## ➤ Typical Characteristics

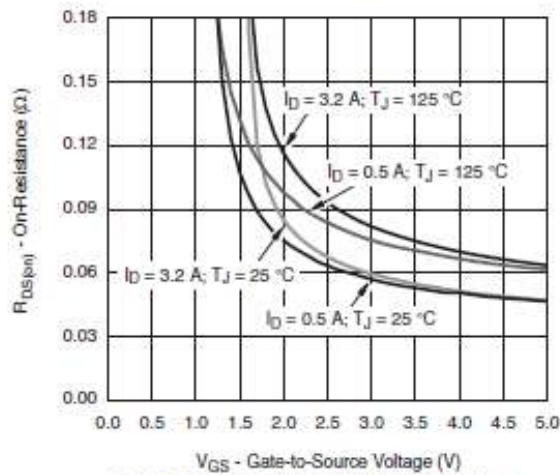




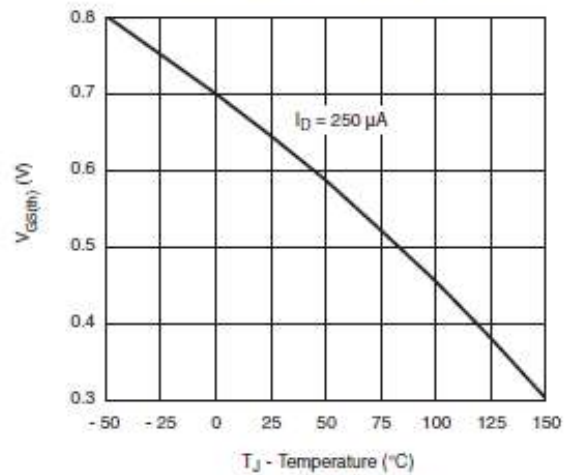
**On-Resistance vs. Junction Temperature**



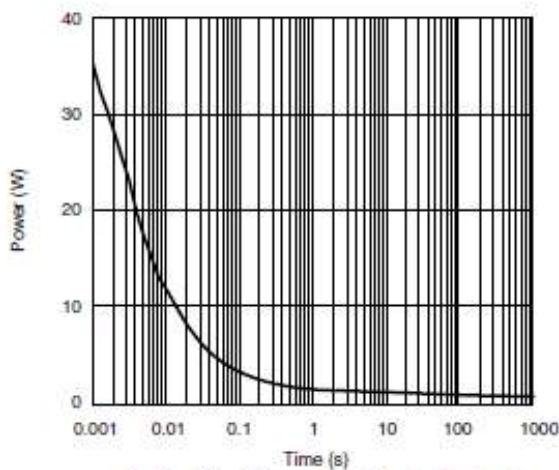
**Source-Drain Diode Forward Voltage**



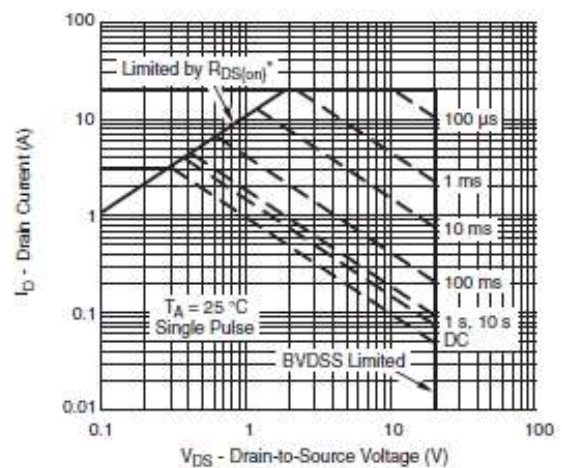
**On-Resistance vs. Gate-to-Source Voltage**



**Threshold Voltage**

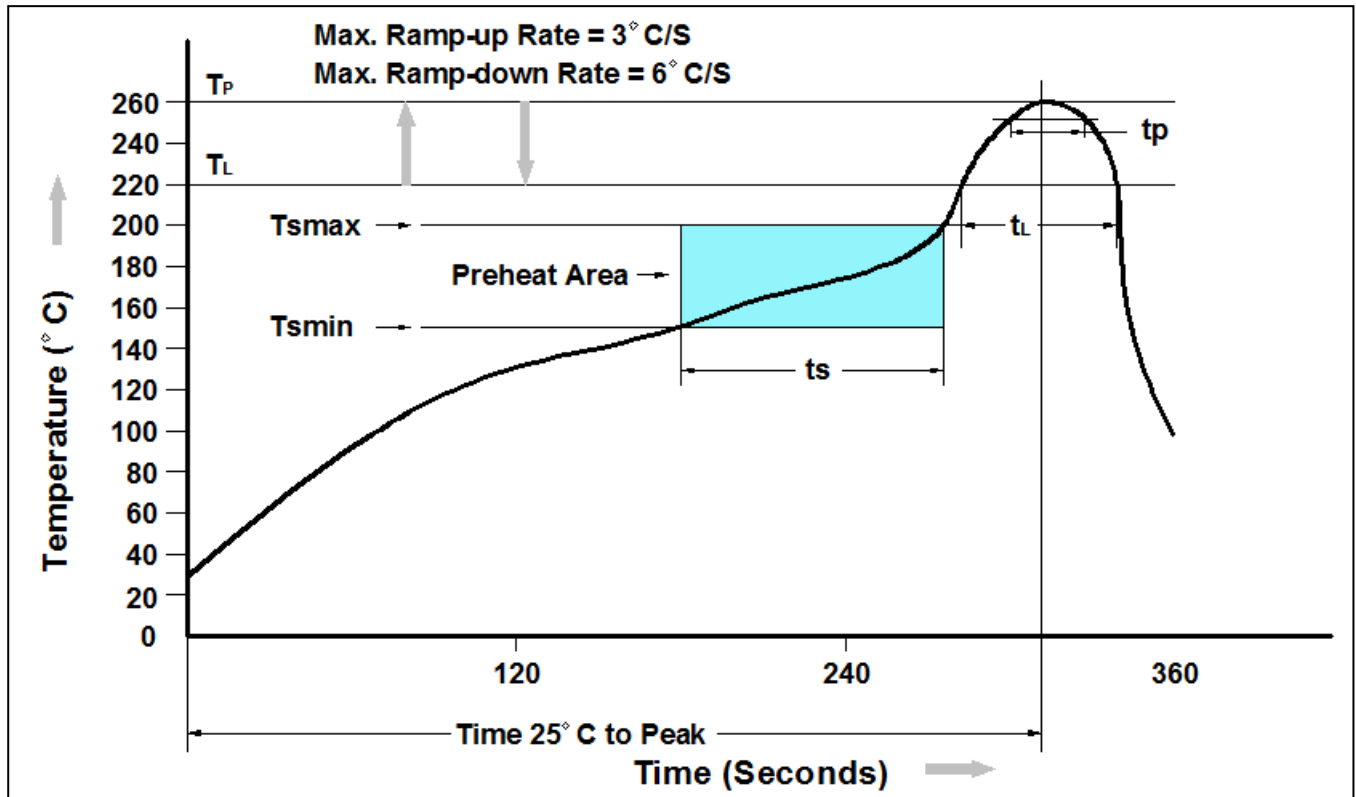


**Single Pulse Power, Junction-to-Ambient**



**Safe Operating Area, Junction-to-Ambient**

## ➤ Recommand IR Reflow Soldering Thermal Profile

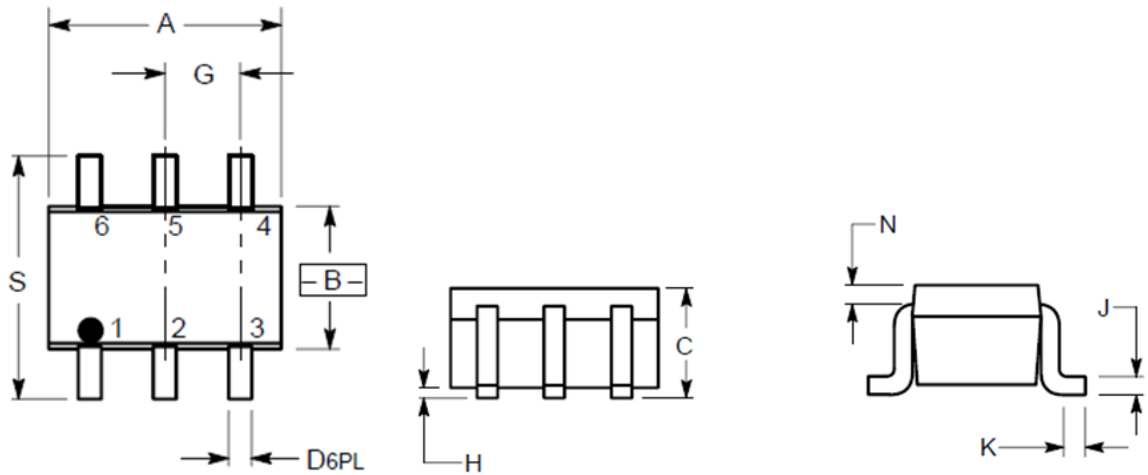


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T <sub>smin</sub> )	150°C
Temperature Max. (T <sub>smax</sub> )	200°C
Time (t <sub>s</sub> ) from (T <sub>smin</sub> to T <sub>smax</sub> )	60-120 seconds
Average Ramp-up Rate (t <sub>L</sub> to t <sub>P</sub> )	3°C/second max.
Liquidous Temperature (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
PAP2427H	SOT-363 Reel	3000 pcs

➤ Package Information ( SOT-363 )



$\pm 0.2$  (0.008) M B M

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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