PAN3018ER

N-CH 30V Fast Switching MOSFET

V_{DS}=30V, I_D=0.1A, $RDS_{(ON)}$=8.0Ω

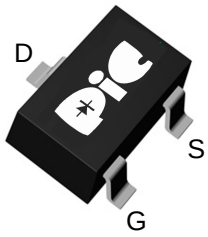
➢ General Description

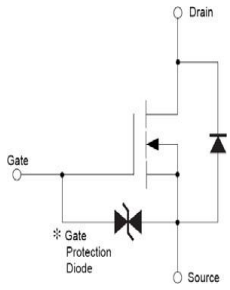
This PAN3018ER N-Channel enhancement mode power field effect transistor is the high density trench technology and this advanced technology can provide excellent Rds(On) performance and efficiency for power switching and load switching application., this device also comply with the RoHS and Green Product requirement with full function reliability approved.

➢ Feature

- ●Fast switching speed
- ●Low voltage drive makes this device ideal for portable equipment
- ●ESD Protection Diode design–in
- ●SOT-323 package design

➢ SOT-323





➢ Application

- ●Drivers: Relays, Solenoids, Lamps, Hammers, Display, Memories, Transistors, etc.
- ●High saturation current capability. Direct Logic-Level Interface: TTL/CMOS
- ●Battery Operated Systems
- ●Solid-State Relays

➢ Absolute Maximum Ratings

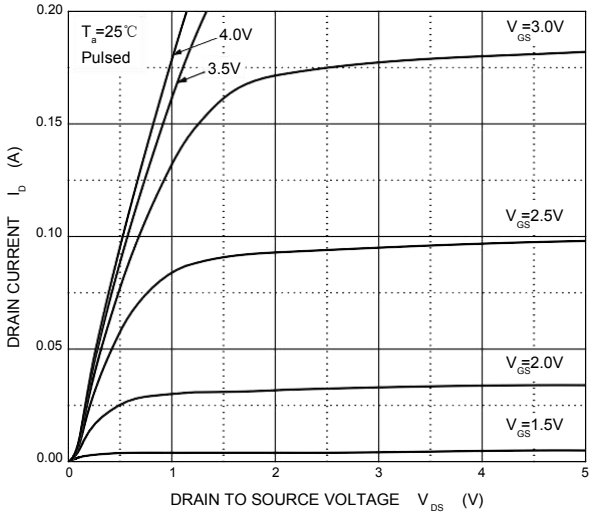
Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	30	V
V_{GSS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current	0.1	A
P_D	Power Dissipation	0.2	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55-150	℃
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	625	℃ /W

➢ Electrical Characteristics (T_A=25°C Unless otherwise noted)

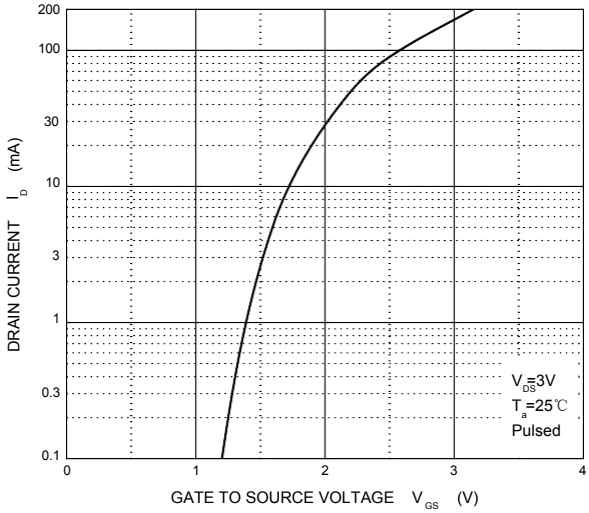
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 10μA	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =30V,V_{GS} = 0V			0.2	μA
Gate –Source leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±10	uA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = 3V, I_D =100μA	0.8		1.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 4V, I_D =10mA			8	Ω
		V_{GS} =2.5V,I_D =1mA			13	Ω
Forward Transconductance	g_{FS}	V_{DS} =3V, I_D = 10mA	20			mS
Dynamic Characteristics*						
Input Capacitance	C_{iss}	V_{DS} =5V,V_{GS} =0V,f =1MHz		13		pF
Output Capacitance	C_{oss}			9		pF
Reverse Transfer Capacitance	C_{rss}			4		pF
Switching Characteristics*						
Turn-On Delay Time	$t_{d(on)}$	V_{GS} =5V, V_{DD} =5V, I_D =10mA, Rg=10Ω, R_L=500Ω		15		ns
Rise Time	t_r			35		ns
Turn-Off Delay Time	$t_{d(off)}$			80		ns
Fall Time	t_f			80		ns

➢ Typical Characteristics

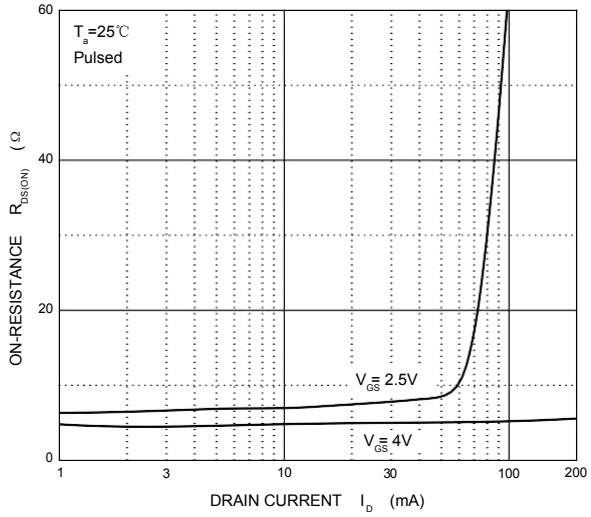
Output Characteristics



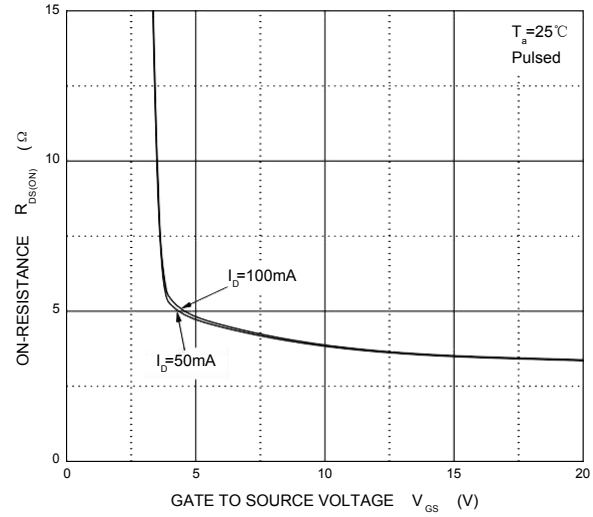
Transfer Characteristics



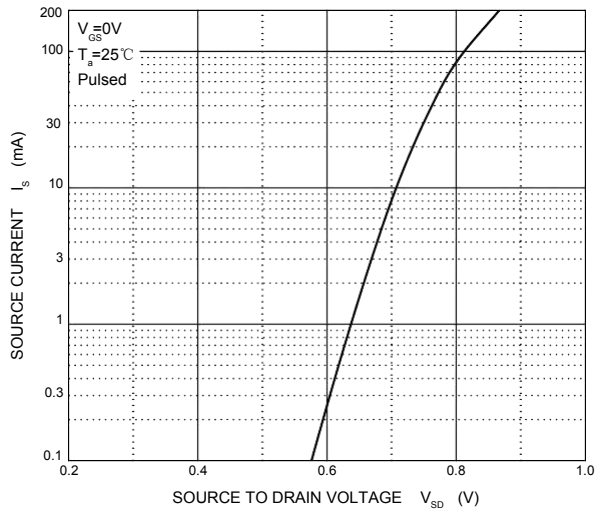
RDS(ON) —— ID



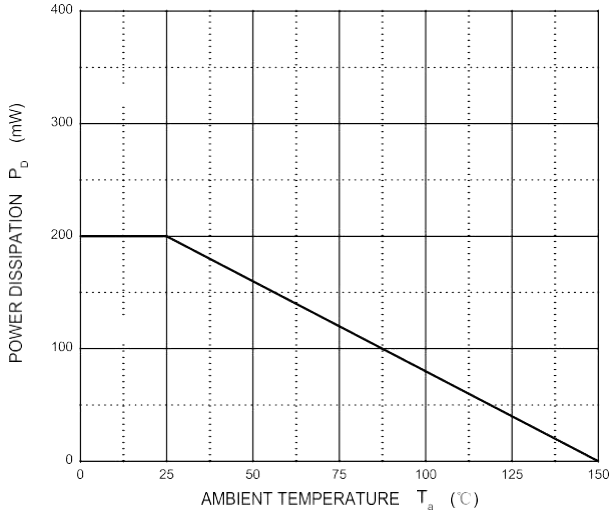
RDS(ON) —— VGS



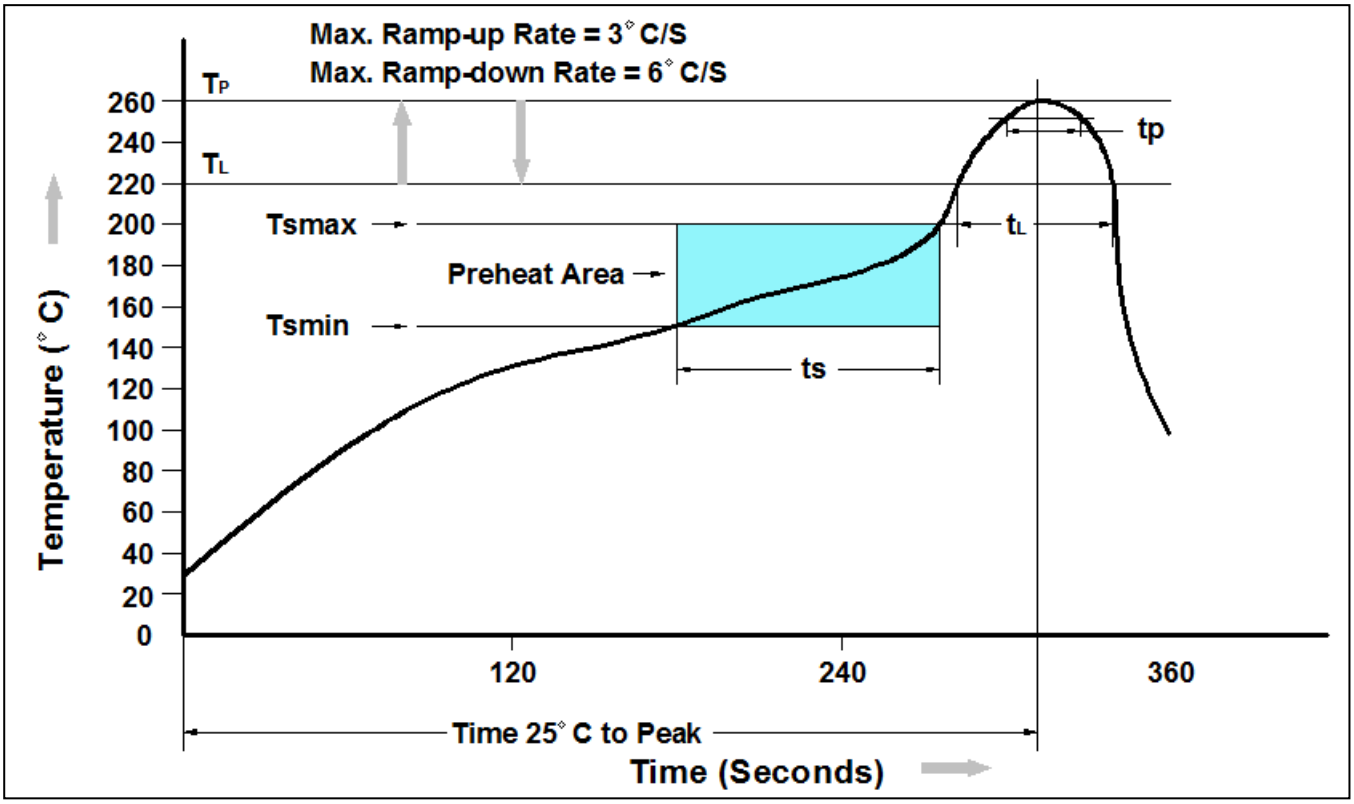
IS —— VSD



PD —— Ta



➢ Recommand IR Reflow Soldering Thermal Profile

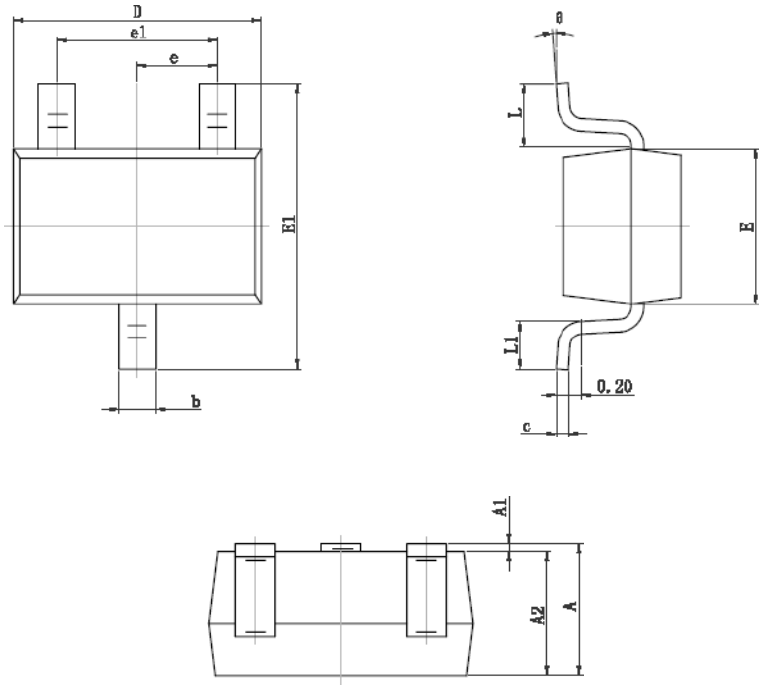


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (Tsmin to Tsmax)	60-120 seconds
Average Ramp-up Rate (tL to tP)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time (tP) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate (TP to TL)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.

➢ Ordering Information

Part Number	Description	Quantity
PAN3018ER	SOT-323 Reel	3000 pcs

➢ Package Information (SOT-323)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

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