PAN6062EB

N-Ch 60V Fast Switching MOSFET

V_{DS}=60V, I_D=0.35A, $RDS_{(ON)}$=2400mΩ

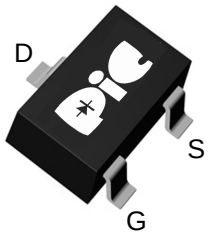
➢ General Description

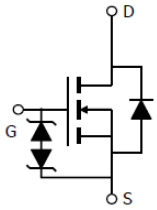
This PAN6062EB N-Channel enhancement mode power field effect transistor is the high density trench technology and this advanced technology can provide excellent Rds(On) performance and efficiency for power switching and load switching application., this device also comply with the RoHS and Green Product requirement with full function reliability approved.

➢ Feature

- ●Super high density cell design for extremely low $RDS_{(ON)}$
- ●Exceptional on-resistance and maximum DC current capability
- ●ESD Protection (2KV) Diode design–in
- ●SOT-523 package design

➢ SOT-523





➢ 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

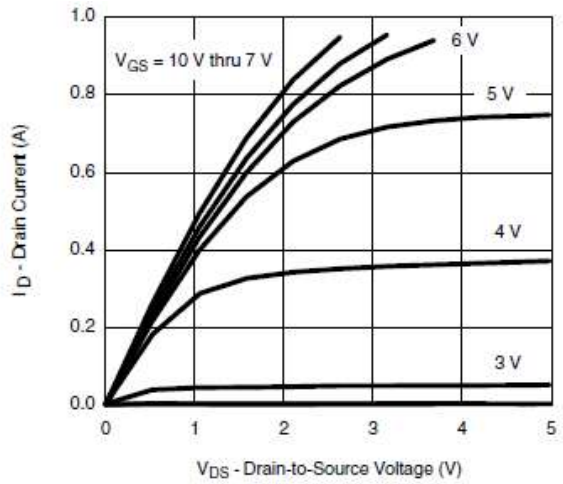
➢ Absolute Maximum Ratings

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	60	V
Gate –Source Voltage		V_{GSS}	±20	V
Continuous Drain Current(T_J=150℃)	T_A=25℃	I_D	0.35	A
	T_A=70℃		0.25	
Pulsed Drain Current		I_{DM}	0.65	A
Continuous Source Current(Diode Conduction)		I_S	0.45	A
Power Dissipation	T_A=25℃	0.27	0.27	W
	T_A=70℃	0.16	0.16	
Operating Junction Temperature		T_J	-55/150	℃
Storage Temperature Range		T_{STG}	-55/150	℃
Gate-Source ESD Rating (HBM, Method 3015)		$R_{\theta JA}$	2000	V

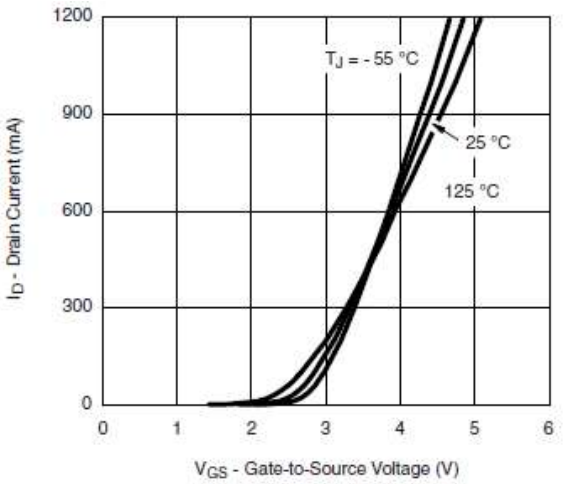
➢ Electrical Characteristics (T_A=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	60			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	1.0		2.0	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±20V			3	uA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V,V_{GS}=0V			1	uA
		V_{DS}=60V,V_{GS}=0V T_J=85℃			10	
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=0.5A		1200	2400	mΩ
		V_{GS}= 4.5V,I_D=0.3A		1600	3000	
Forward Transconductance	g_{FS}	V_{DS}=10V,I_D=0.2A		0.2		S
Diode Forward Voltage	V_{SD}	I_S=0.2A,V_{GS}=0V		0.75	1.4	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=10V,V_{GS}=4.5V I_D≡0.25A		400		pC
Gate-Source Charge	Q_{gs}			110		
Gate-Drain Charge	Q_{gd}			150		
Input Capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V f=1MHz		30		pF
Output Capacitance	C_{oss}			8		
Reverse Transfer Capacitance	C_{rss}			5		
Turn-On Time	$t_{d(on)}$	V_{DD}=30V,R_L=150Ω I_D≡0.2A,V_{GEN}=-4.5V R_G=10Ω		10	20	ns
	t_r			35	50	
Turn-Off Time	$t_{d(off)}$			20	30	
	t_f			40	60	

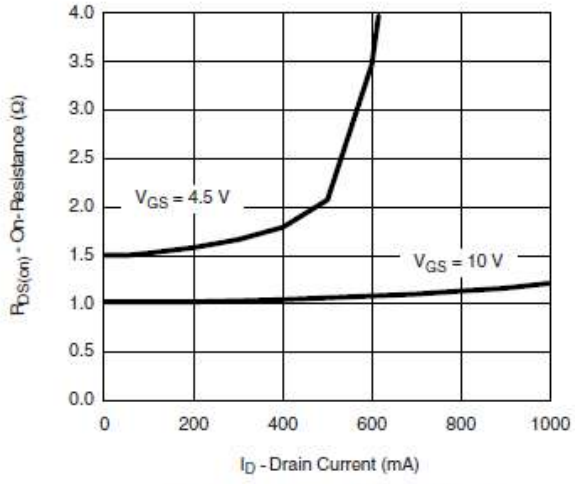
➢ Typical Characteristics



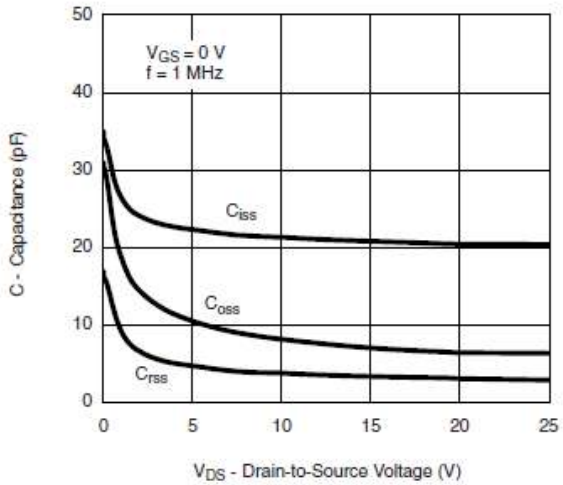
Output Characteristics



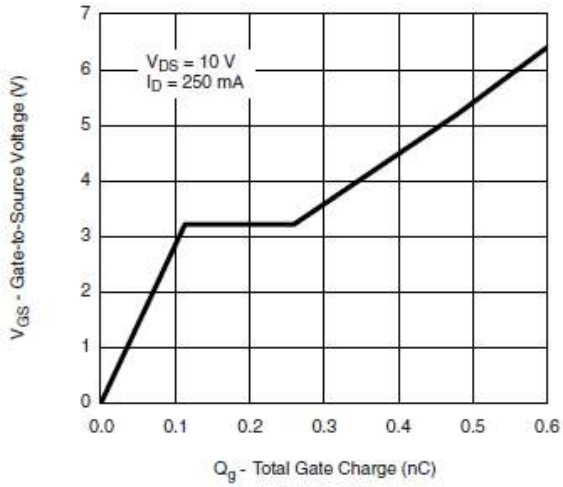
Transfer Characteristics



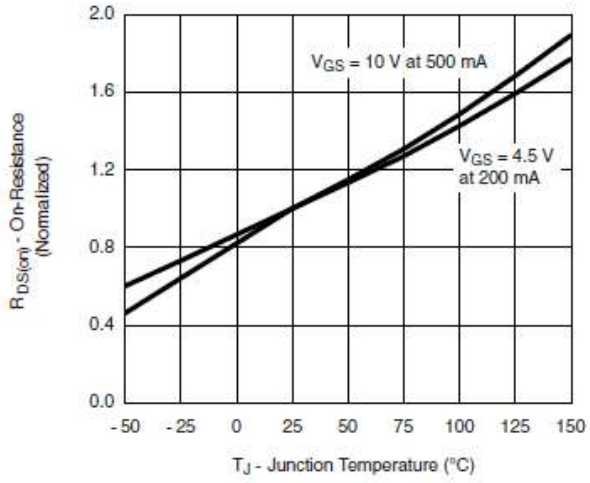
On-Resistance vs. Drain Current



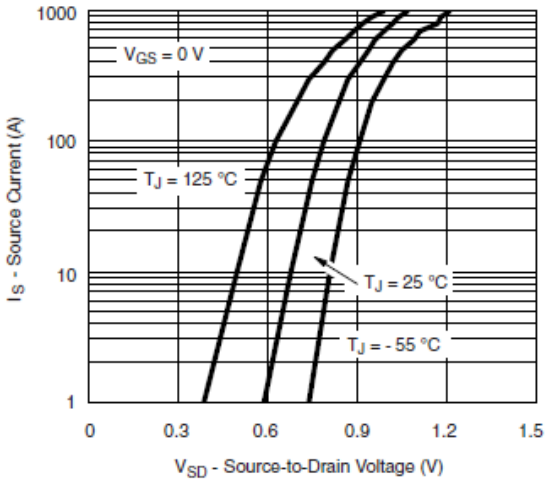
Capacitance



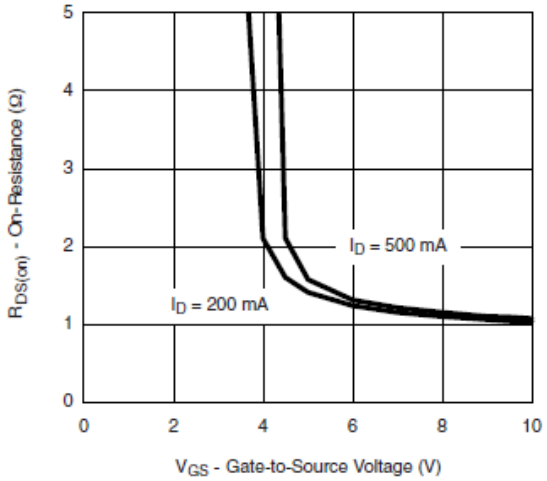
Gate Charge



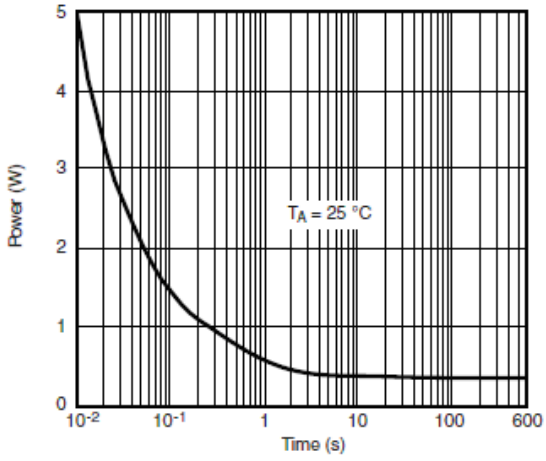
On-Resistance vs. Junction Temperature



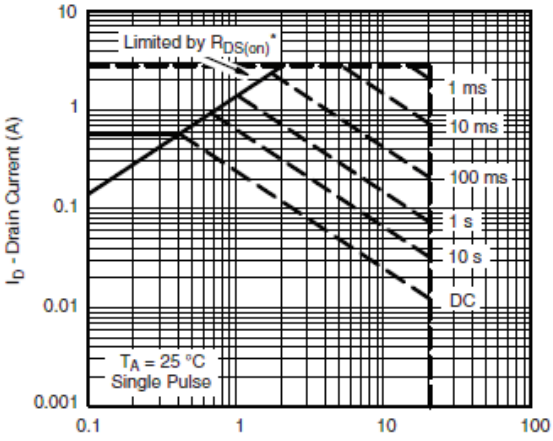
Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage

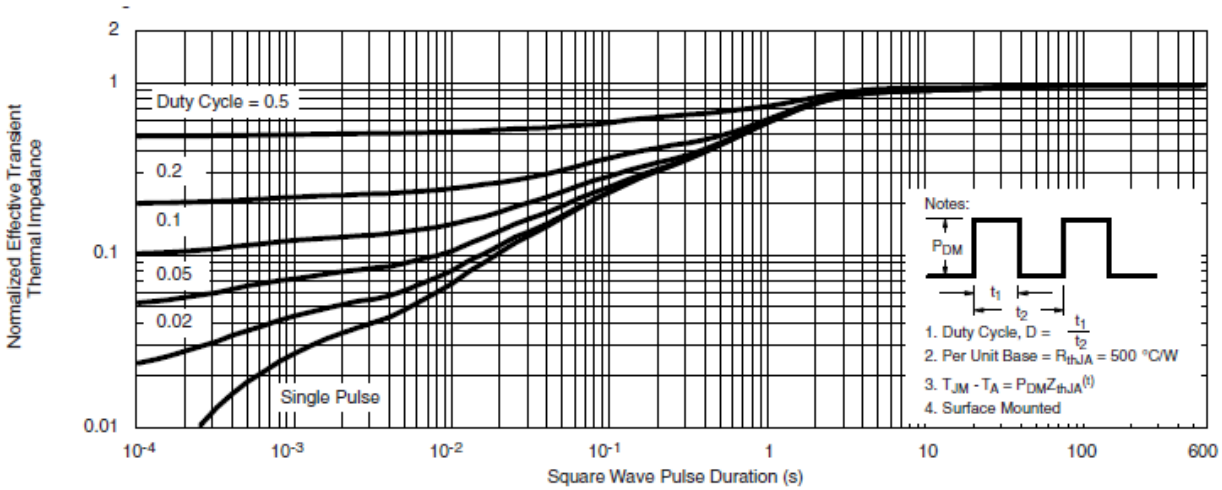


Single Pulse Power



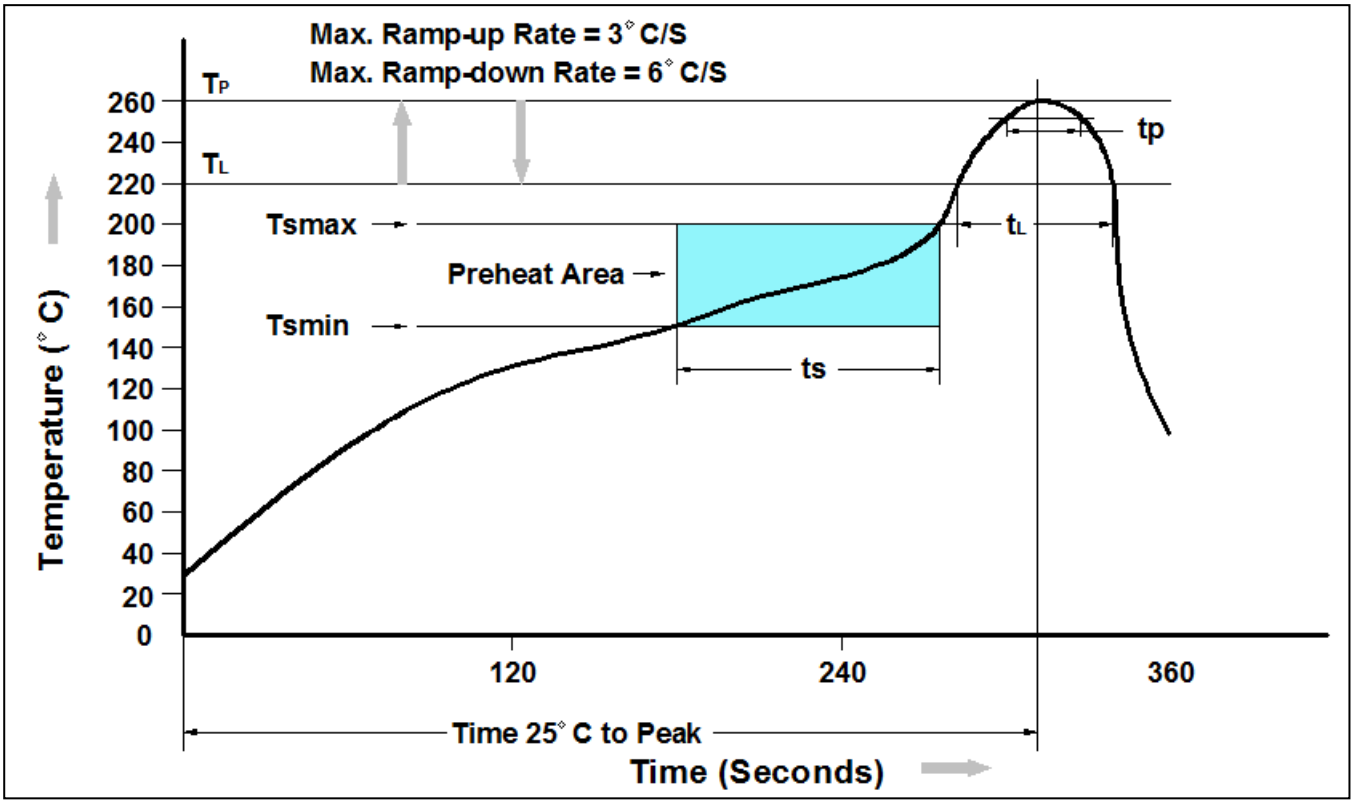
* V_{GS} > minimum V_{GS} at which $R_{DS(on)}$ is specified

Safe Operating Area, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Ambient

➢ Recommand IR Reflow Soldering Thermal Profile

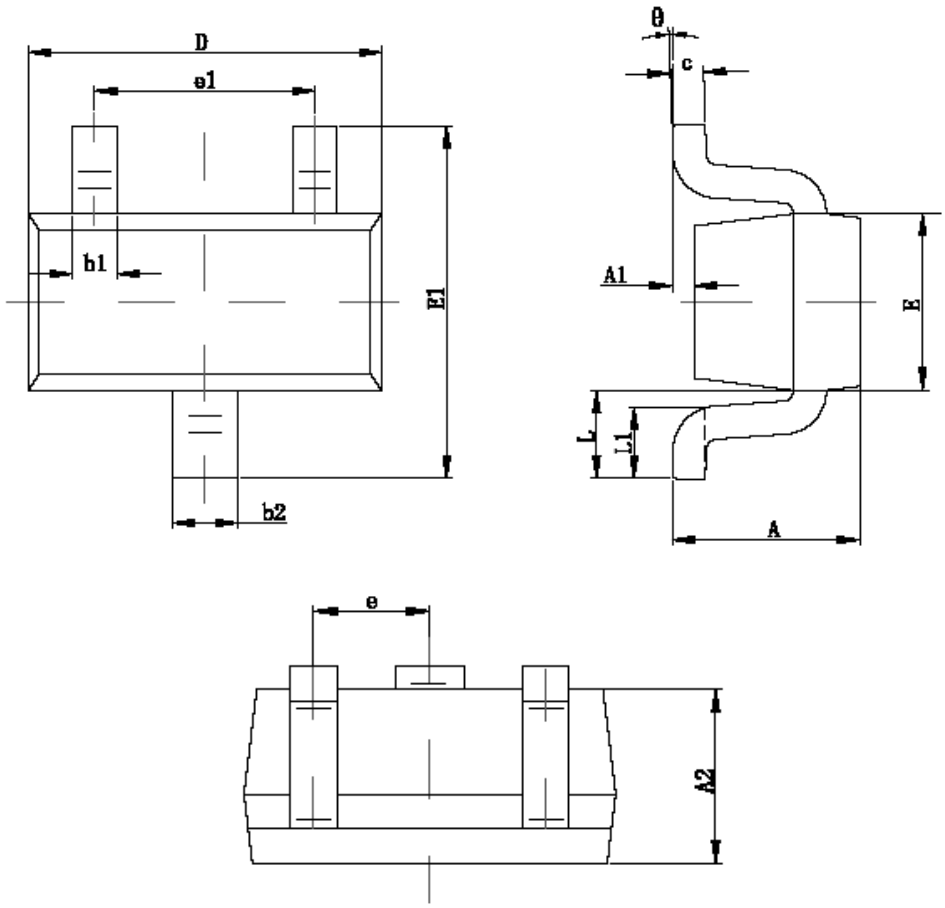


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (Tsmin to Tsmax)	60-120 seconds
Average Ramp-up Rate (tL to tP)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Temperature	260°C +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
PAN6062EB	SOT-523 Reel	3000 pcs

➢ Package Information (SOT-523)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.325	0.010	0.013
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.750	0.850	0.030	0.033
E1	1.450	1.750	0.057	0.069
e	0.500 TYP		0.020 TYP	
e1	0.900	1.100	0.035	0.043
L	0.550 REF		0.022 REF	
L1	0.280	0.440	0.011	0.017
θ	0°	4°	0°	4°

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