

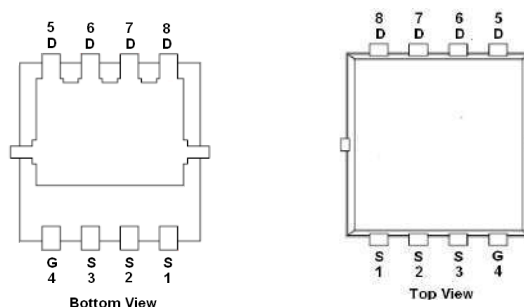
➤ General Description

This PAN75TD36CSA 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

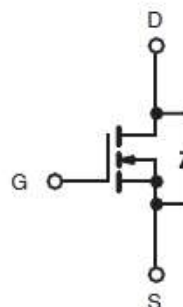
- Green Device Available
- Super Low Gate Charge
- 100% EAS Guaranteed
- Excellent CdV/dt effect decline
- Advanced high cell density Trench technology
- DFN3.3x3.3-8L package design

➤ DFN3.3x3.3-8L



➤ Application

- DC/DC Converters
- POL



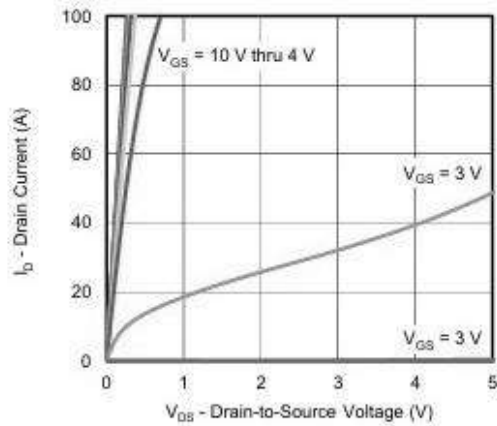
➤ Absolute Maximum Ratings

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate –Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current($T_J=150^{\circ}C$)	I_{DSM}	65	A
		54	
	I_{DSM}	24	
		20	
Pulsed Drain Current ($t=100\mu s$)	I_{DM}	200	
Continuous Source Current(Diode Conduction)	I_S	24	A
		3.2	
Single Pulse Avalanche Current	I_{AS}	20	
	E_{AS}	20	mJ
Power Dissipation	P_D	26	W
		3.5	
Operating Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature Range	T_{STG}	-55/150	$^{\circ}C$
Thermal Resistance-Junction to Ambient	$t \leq 10 s$	28	$^{\circ}C/W$
Maximum Junction-to-Case (Drain)	Steady-State	3.8	

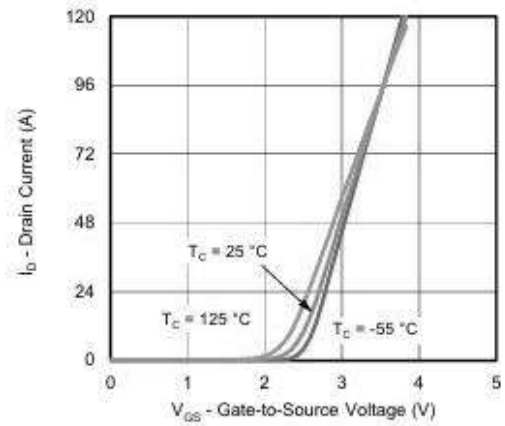
➤ **Electrical Characteristics ($T_A=25^\circ C$ Unless otherwise noted)**

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.7	2.5	
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=24V, V_{GS}=0V$			1	uA
		$V_{DS}=24V, V_{GS}=0V$ $T_J=85^\circ C$			10	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq 10V, V_{GS}=10V$	40			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$		2.7	3.2	m Ω
		$V_{GS}=4.5V, I_D=15A$		3.8	4.5	
Forward Transconductance	g_{FS}	$V_{DS}=15V, I_D=10A$		52		S
Diode Forward Voltage	V_{SD}	$I_S=5A, V_{GS}=0V$		0.7	1.2	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=15V, V_{GS}=4.5V$ $I_D=10A$		7.6	12	nC
Gate-Source Charge	Q_{gs}			3.6		
Gate-Drain Charge	Q_{gd}			1.4		
Gate Resistance	R_g	$f=1MHz$	0.4	1.8	3.6	Ω
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V$ $f=1MHz$		1150		pF
Output Capacitance	C_{oss}			405		
Reverse Transfer Capacitance	C_{rss}			35		
Turn-On Time	$t_{d(on)}$	$V_{DD}=15V, R_L=1.5\Omega$ $I_D=15A, V_{GEN}=10V$ $R_G=1.0\Omega$		10	20	ns
	t_r			5	10	
Turn-Off Time	$t_{d(off)}$			20	40	
	t_f			5	10	

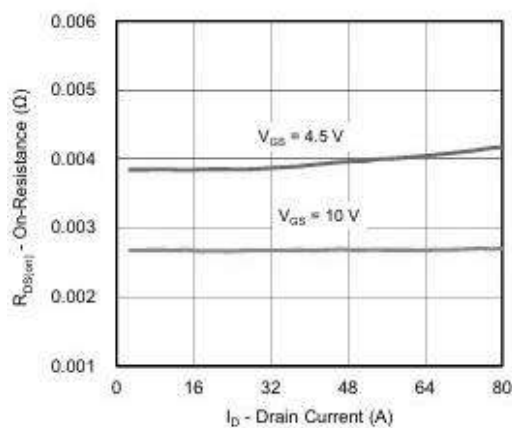
➤ Typical Characteristics



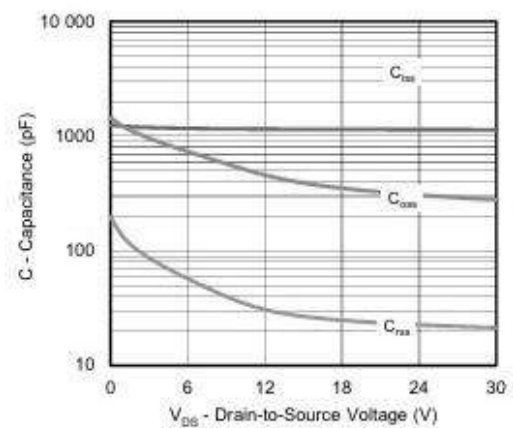
Output Characteristics



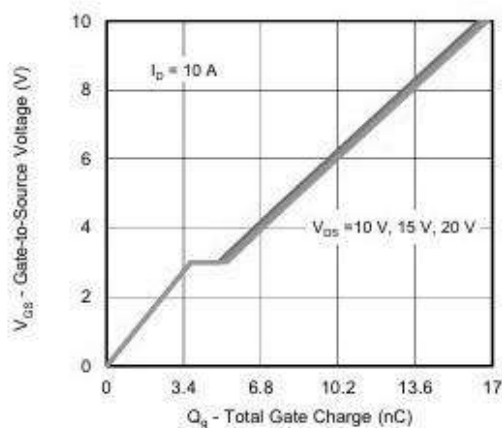
Transfer Characteristics



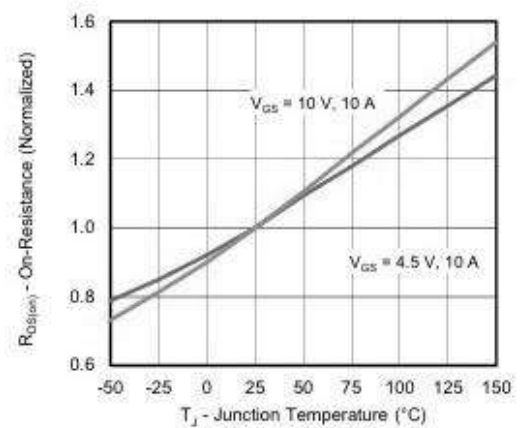
On-Resistance vs. Drain Current and Gate Voltage



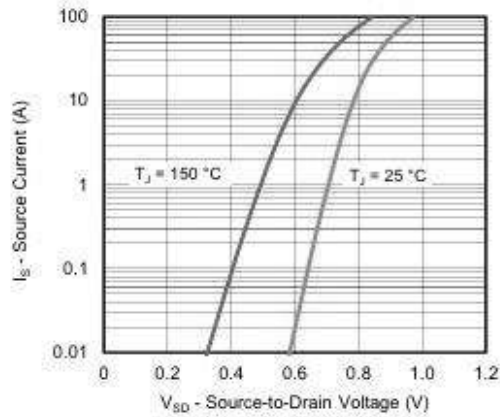
Capacitance



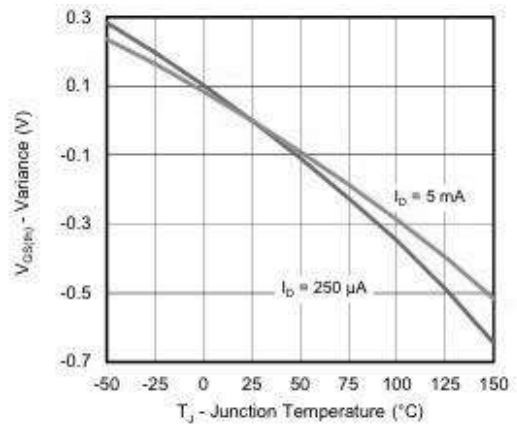
Gate Charge



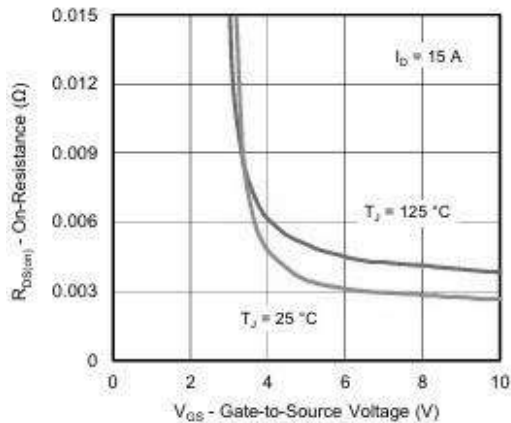
On-Resistance vs. Junction Temperature



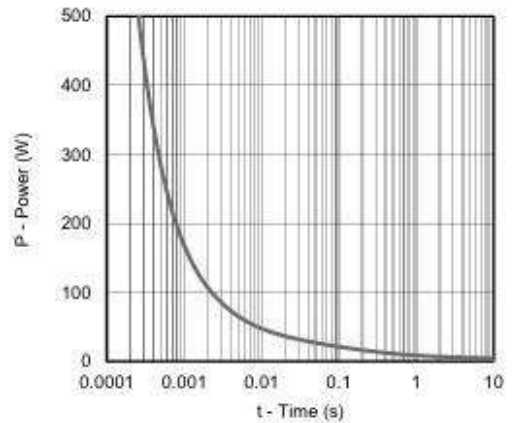
Source-Drain Diode Forward Voltage



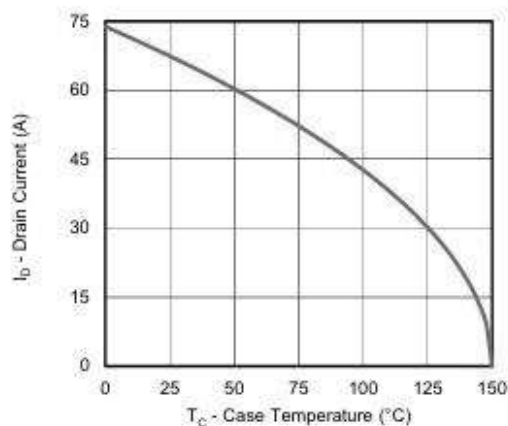
Threshold Voltage



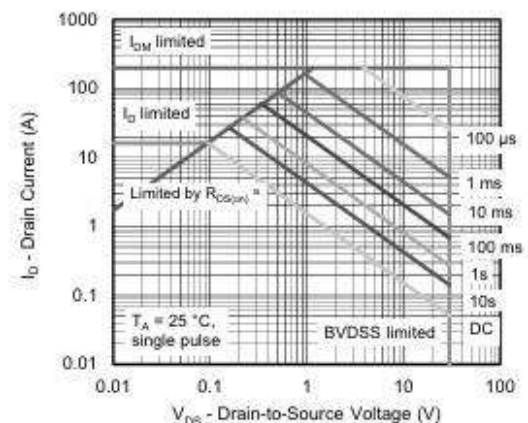
On-Resistance vs. Gate-to-Source Voltage



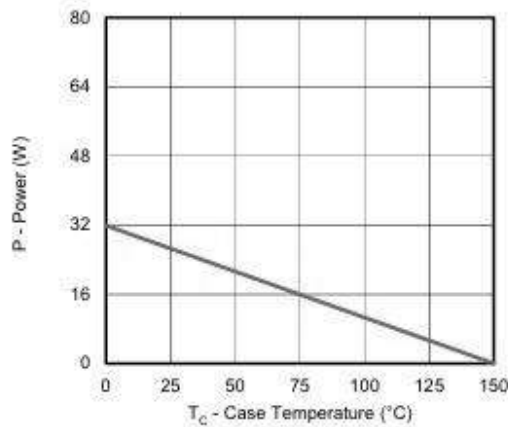
Single Pulse Power, Junction-to-Ambient



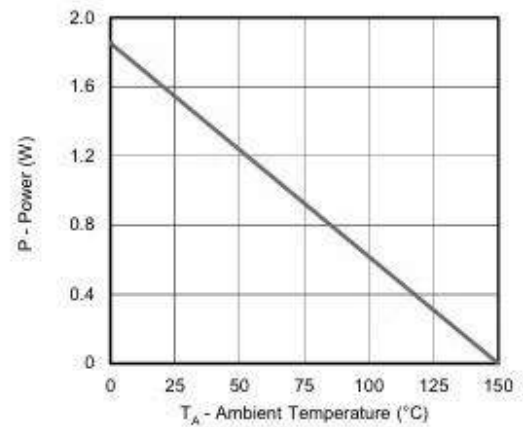
Current Derating ^a



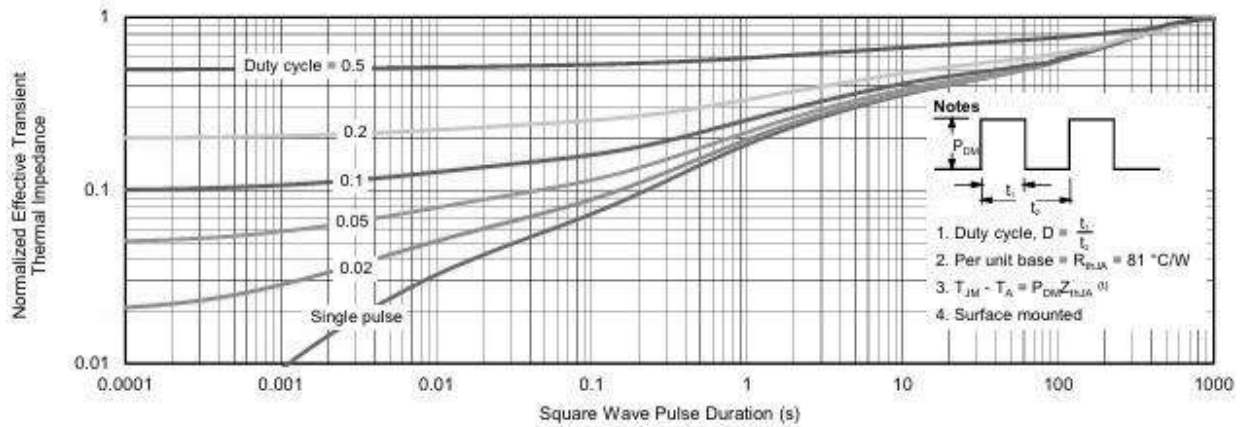
Safe Operating Area, Junction-to-Ambient



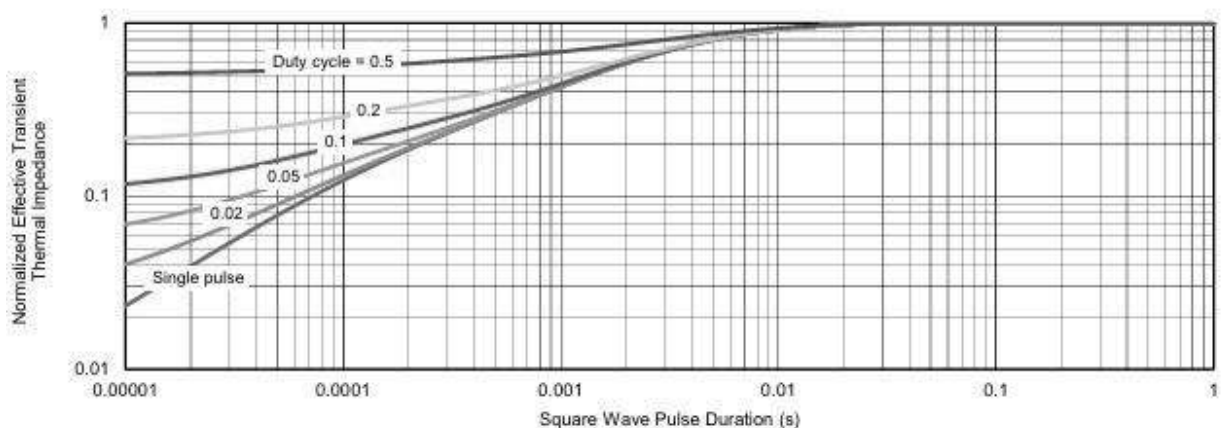
Power, Junction-to-Case



Power, Junction-to-Ambient

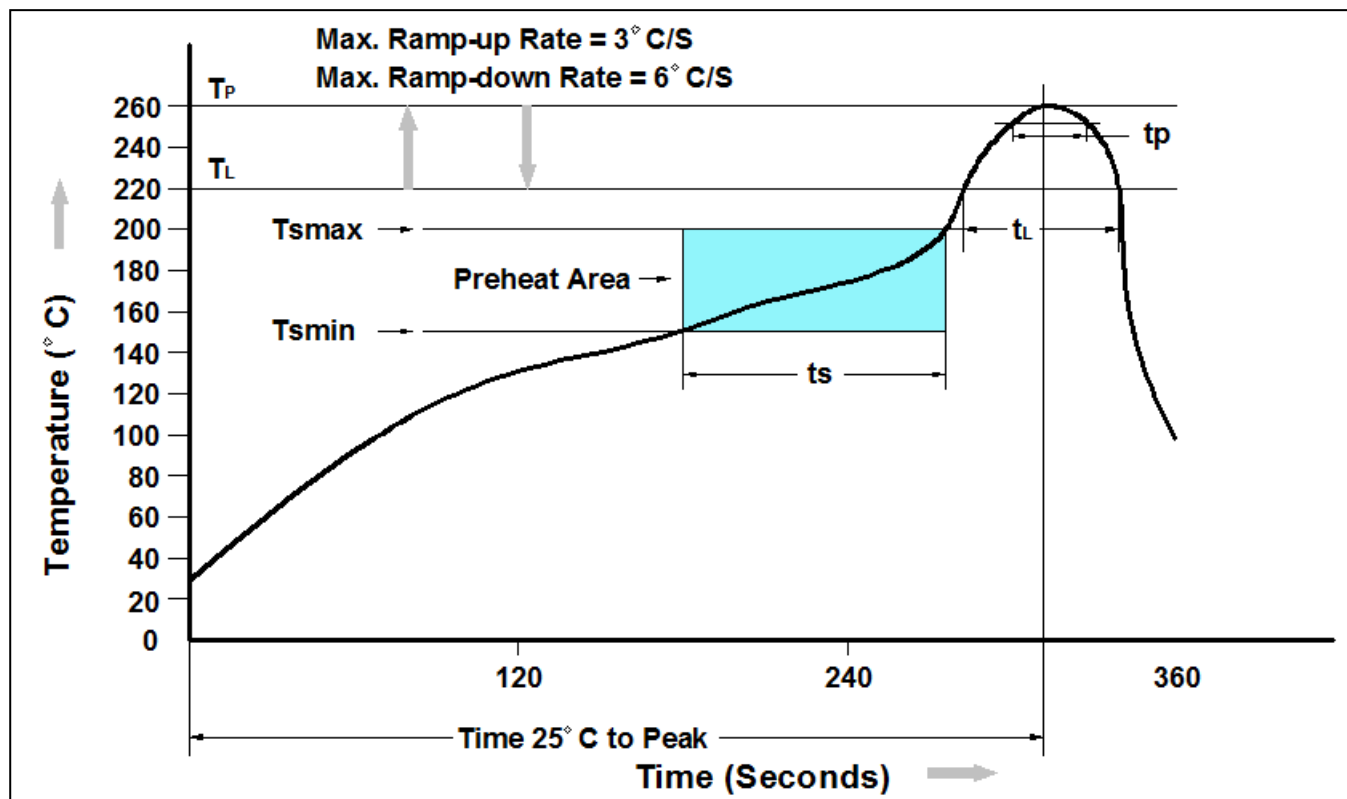


Normalized Thermal Transient Impedance, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Case

➤ Recommend IR Reflow Soldering Thermal Profile

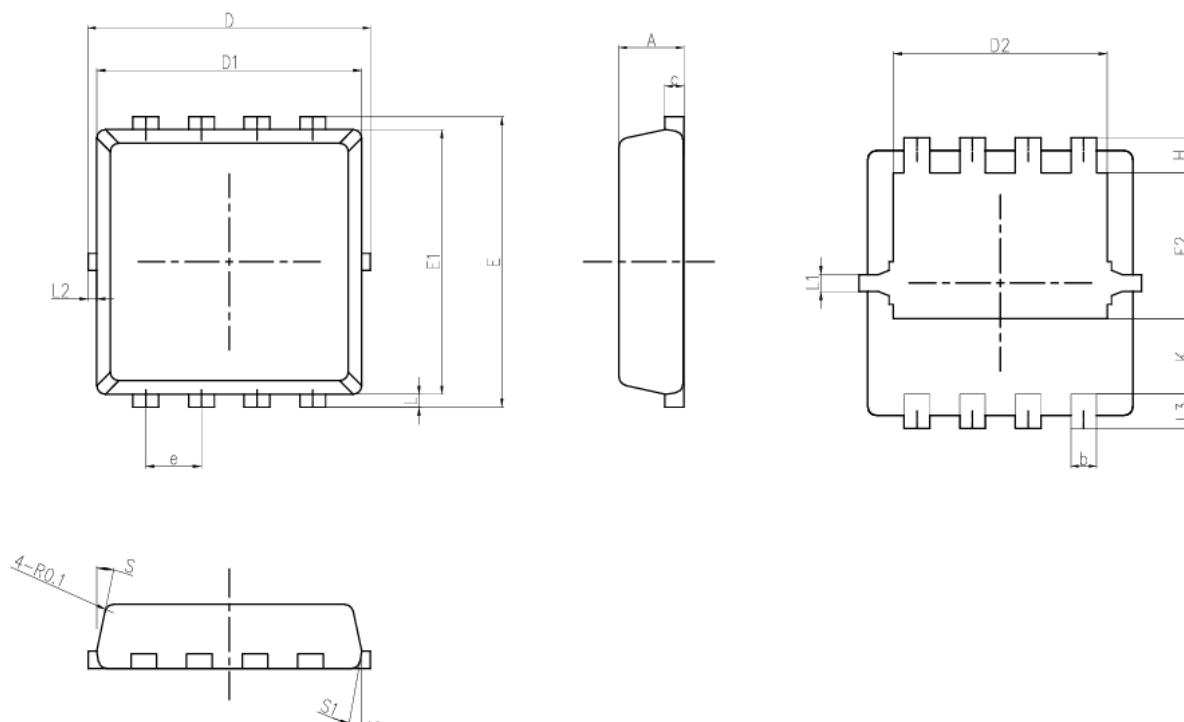


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T_{Smin})	150°C
Temperature Max. (T_{Smax})	200°C
Time (t_S) from (T_{Smin} to T_{Smax})	60-120 seconds
Average Ramp-up Rate (t_L to t_P)	3°C/second max.
Liquidous Temperature (T_L)	217°C
Time (t_L) Maintained Above (T_L)	60 – 150 seconds
Peak 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
PAN75TD36CSA	DFN3.3x3.3-8L Reel	5000 pcs

➤ Package Information (DFN3.3X3.3-8L)



COMMON DIMENSIONS (UNIT of MEASURE=MILLIMETER)											
SYMBOL	MIN	NOM	MAX	SYMBOL	MIN	NOM	MAX	SYMBOL	MIN	NOM	MAX
A	0.66	0.76	0.86	e	0.55	0.65	0.75	L	0.06	0.15	0.20
b	0.25	0.30	0.35	E	3.15	3.30	3.45	L1	0.10	0.20	0.30
c	0.19	0.20	0.22	E1	3.00	3.10	3.20	L2	0	0.10	0.15
D	3.05	3.30	3.45	E2	1.60	1.70	1.80	L3	0.30	0.40	0.50
D1	3.00	3.10	3.20	H	0.31	0.41	0.51	S	10°	12°	14°
D2	2.40	2.50	2.60	K	0.79	0.89	0.99	S1	8°	10°	12°

DISCLAIMER

- The information in this document and any product described herein are subject to change without notice and should not be construed as a commitment by Paceleader, Paceleader reserve the right to make changes to the information in this document.
- Though Paceleader make effort to improve product quality and reliability, Product can malfunction and fail due to their inherent electrical sensitivity and vulnerability to physical stress, it is the responsibility of the customer, when utilizing Paceleader products, to comply with the standards of safety in making a safe design for entire system and to avoid situation in which a malfunction or failure., In developing a new designs, customer should ensure that the device which shown in this documents are used within specified operating ranges.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by Paceleader for any infringements of patents or other rights of the third parties which may result from its use.