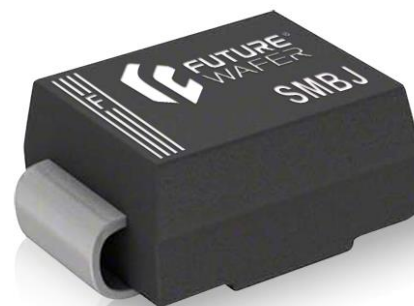


1. Synopsis

1-1. Feature List

- Low Voltage Overshoot
- Low On-state Voltage
- Halogen Free And RoHS Compliant
- Fails Short Circuit When Surged In Excess Of Ratings



SMBJ

1-2. Applicable Global Standards

- TIA-968-A/B
- IEC61000-4-5 2nd
- ITU K.20/21/45 Enhanced Level
- ITU K.20/21/45 Basic Level
- GR 1089 Inter-Building
- YD/T 1082/993/950



1-3. Mechanical Characteristics

- Molded JEDEC Package: SMBJ
- Packing: Tape and Reel
- Flammability rating UL 94V-0
- Halogen Free
- JEDEC MSL Classification: Level 1



1-4. Electrical Characteristics (Tamb. = 25°C)

Part No.	Marking Code	V_{DRM} @ $I_{DRM} = 5\mu A$	V_S @100V/uS	I_H	I_S	I_T	V_T @ $I_T = 2.2A$	Capacitance @1MHz, 2V bias	
		V Min.	V Max.	mA, Min.	mA, Max.	A, Max.	V, Max.	Min.	Max.
P0800TC	P-8D	6	25	50	800	2.2	4	50	150
P0300TC	P03D	25	40					50	150
P0640TC	P06D	58	77					100	160
P0720TC	P07D	65	88					100	150
P0900TC	P09D	75	98					95	140
P1100TC	P11D	90	130					75	115
P1300TC	P13D	120	160					65	100
P1500TC	P15D	140	180					60	90
P1800TC	P18D	170	220					50	90
P2300TC	P23D	190	240					50	80
P2600TC	P26D	220	260					50	75
P3100TC	P31D	275	350					45	70
P3500TC	P35D	320	400					45	65

2. Contents

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3. Electrical Property

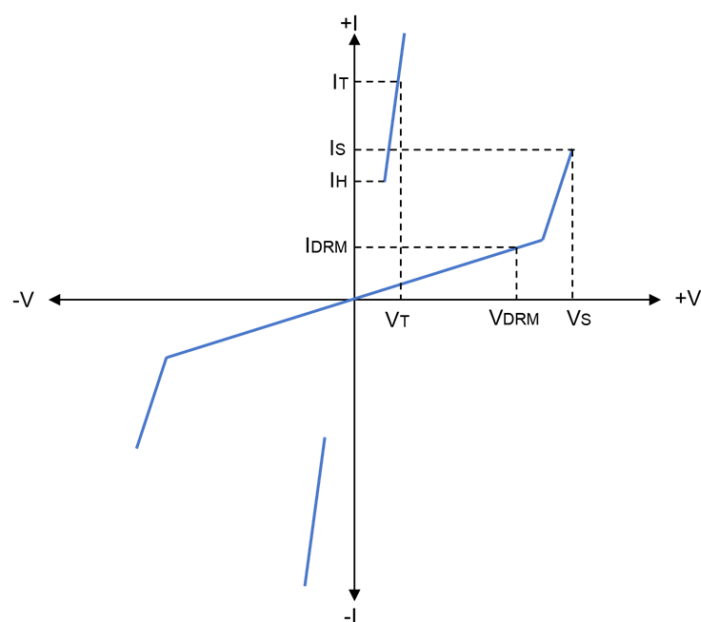
3-1. Surge Ratings

Current Waveform	2/10 us	8/20 us	10/160 us	5/320 us	10/1000 us
Voltage Waveform	2/10 us	1.2/50 us	10/160 us	10/700 us	10/1000 us
I_{PP}	1000A	800A	-	-	200A

3-2. Thermal Characteristics

Parameter	Symbol	Values	Units
Thermal Resistance, Junction-Ambient	R_{thJA}	90	°C/W
Junction Temperature	T_J	-55 ~ +150	°C
Storage Temperature	T_{STG}	-65 ~ +150	

3-3. I-V Curve Characteristics



C_O	Off-state Capacitance	Typical capacitance measured in off state.
I_S	Switching Current	Maximum current required to switch to on state.
I_{DRM}	Leakage Current	Maximum peak off-state current measured at V_{DRM} .
I_H	Holding Current	Minimum current required to maintain on state.
I_{PP}	Peak Pulse Current	Maximum rated peak impulse current.
I_T	On-state Current	Maximum rated continuous on-state current.
I_{TSM}	Peak One-cycle Surge Current	Maximum rated one-cycle AC current.
V_S	Switching Voltage	Maximum voltage prior to switching to on state during 100 V/μs surge.
V_{DRM}	Peak Off-state Voltage	Maximum voltage that can be applied while maintaining off state.
V_T	On-state Voltage	Maximum voltage measured at rated on-state current.

3-4. Ratings and Characteristics Curve (TA=25°C Unless Otherwise Noted)

Fig 1. $t_r \times t_d$ Pulse Waveform

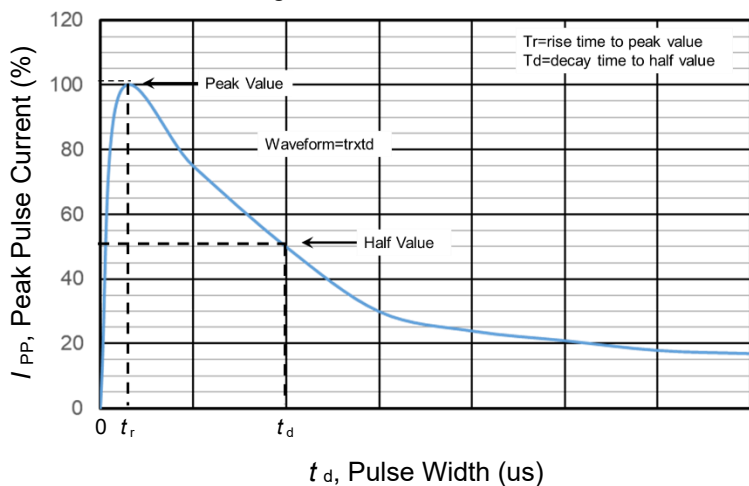


Fig 2. Normalized V_s Change vs. Junction Temperature

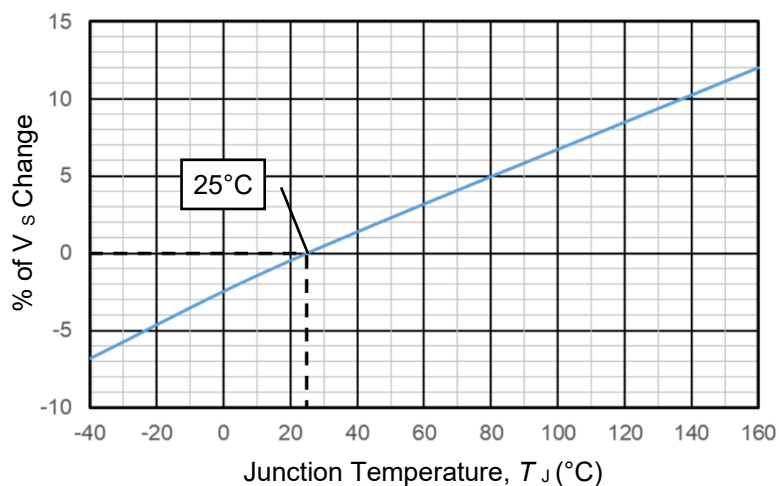
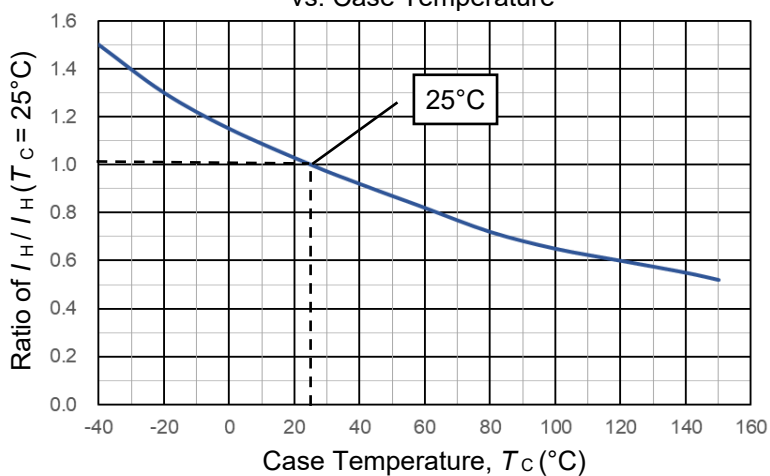


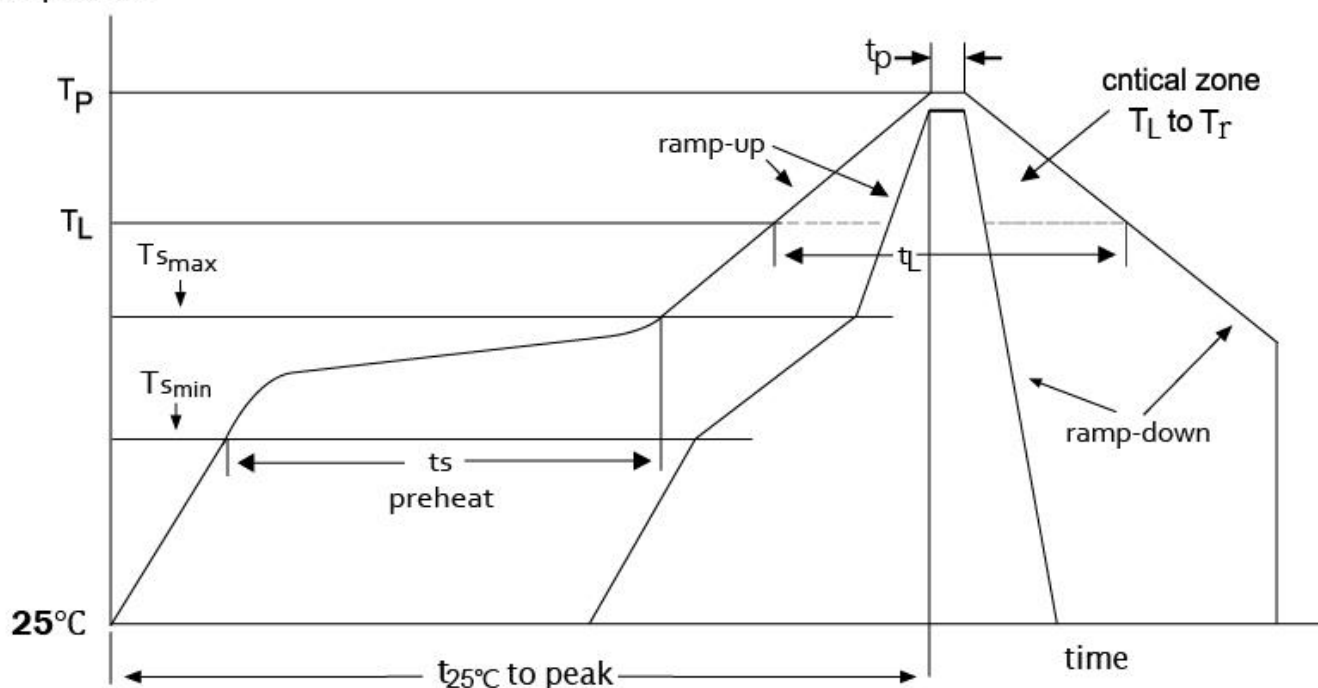
Fig 3. Normalized DC Holding Current vs. Case Temperature



4. Soldering Parameters

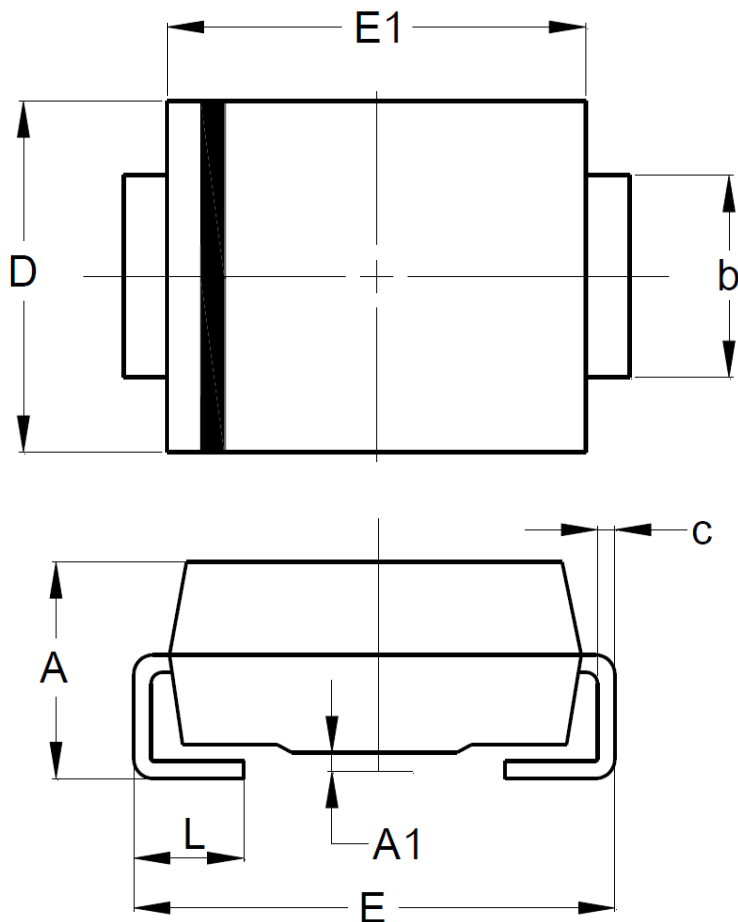
Profile Feature	SnPb eutectic assembly	Pb-free assembly
Average ramp-up rate (T _{smax} to T _p)	3 °C/s maximum	3 °C/s maximum
Preheat		
Temperature minimum (T _{smin})	100 °C	150 °C
Temperature maximum (T _{smax})	150 °C	200 °C
Time (t _{smin} to t _{smax})	60 s to 120 s	60 s to 180 s
Time maintained above		
Temperature (T _L)	183 °C	217 °C
Time (t _L)	60 s to 150 s	60 s to 150 s
Peak/classification temperature (T)	235 °C	260 °C
Number of allowed reflow cycles	3	3
Time within 5 °C of actual peak temperature (t _p)	10 s to 30 s	20 s to 40 s
Ramp-down rate	6 °C/s maximum	6 °C/s maximum
Time 25 °C to peak temperature	6 minutes maximum	8 minutes maximum

temperature



5. Package Information

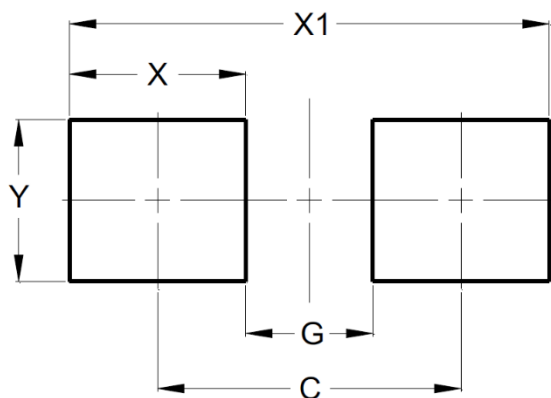
5-1. Dimension



SMBJ		
Dim	Min.	Max.
A	2.00	2.60
A1	0.05	0.20
b	1.85	2.20
c	0.15	0.31
D	3.30	3.94
E	5.00	5.59
E1	4.05	4.75
L	0.76	1.52

Unit:mm

5-2. PCB Pad Layout Recommendation

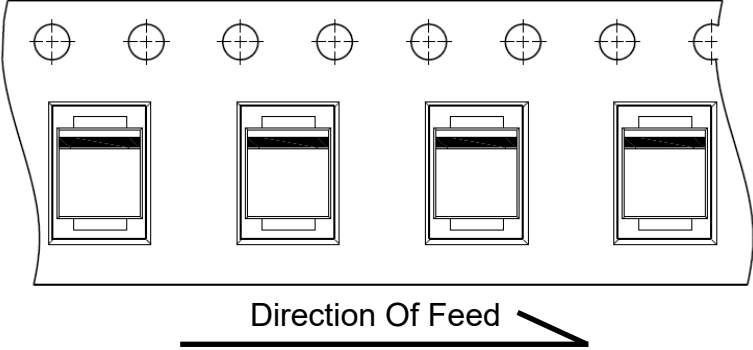


SMBJ	
Symbol	Values
C	4.30
G	1.80
X	2.50
X1	6.80
Y	2.30

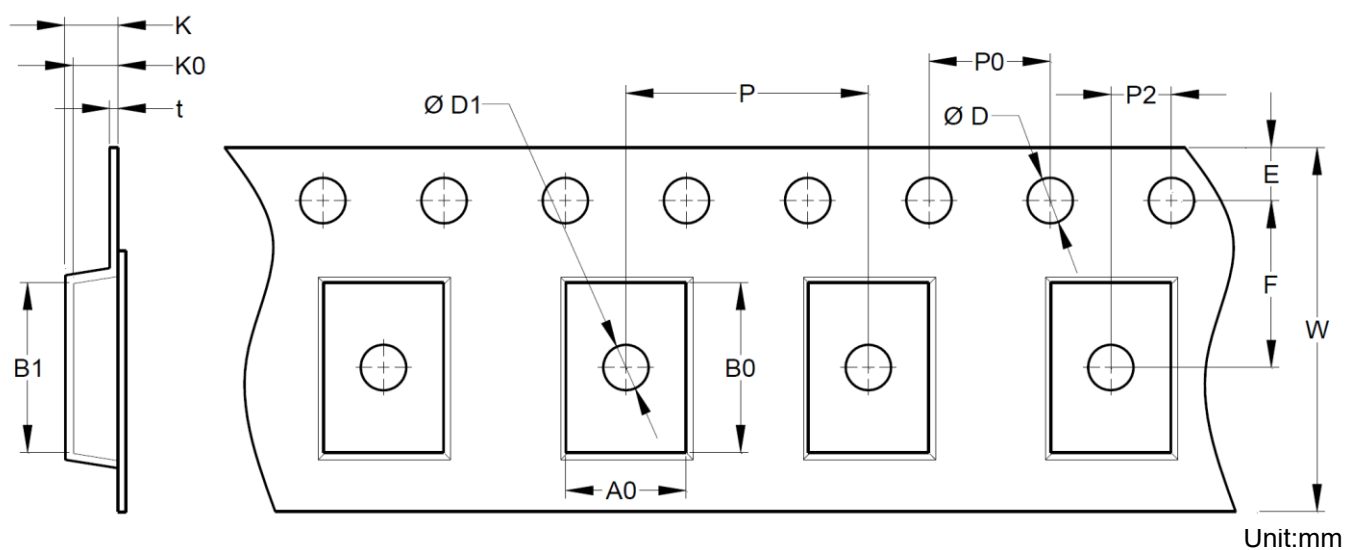
Unit:mm

6. Packing

6-1. Taping and Reel Specification

Taping Width	Tape Orientation
12mm	

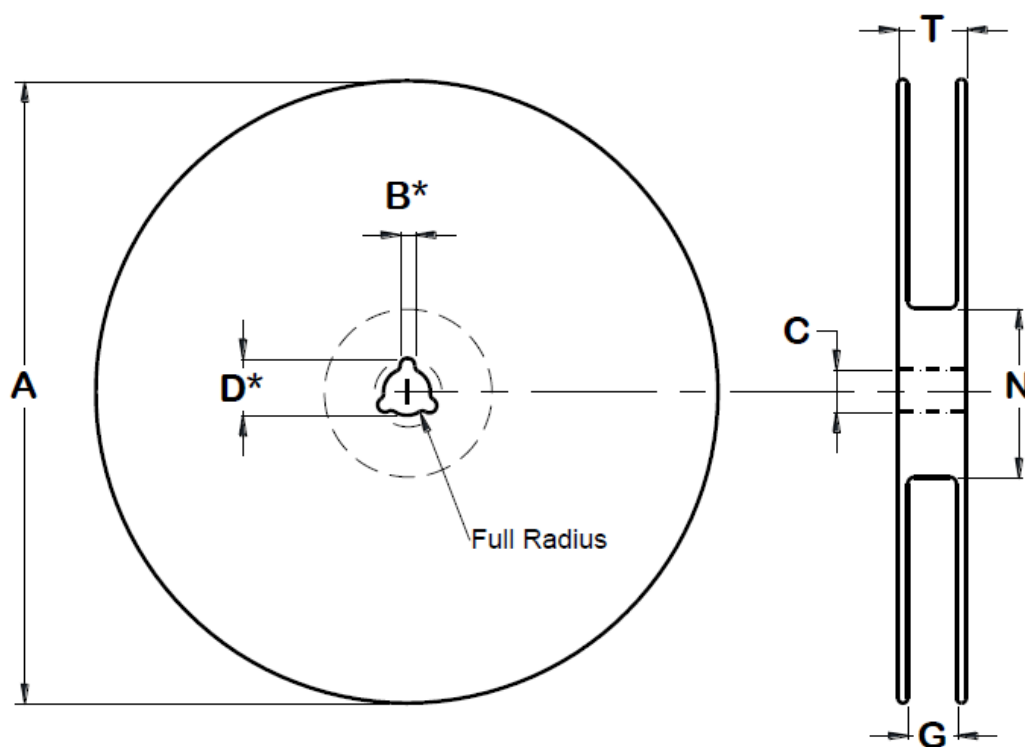
6-2. Embossed Carrier Tape Specification



Unit:mm

Dimension	W	B1	D	D1	E	F	K	P	P0	P2	t	W
Value	12 mm	8.2 Max	1.5+ 0.1/- 0.0	1.5 Min.	1.75 ±0.10	5.5 ±0.05	4.5 Max.	8.0 ±0.10	4.0 ±0.10	2.0 ±0.05	0.4 Max.	12 ±0.3
A0 / B0 / K0	Determined by Component Size. The Clearance Between the Component And The Cavity Must Comply to The Rotational And Lateral Movement Requirement Provided in Figures in The "Maximum Component Movement in Tape Pocket" Section.											

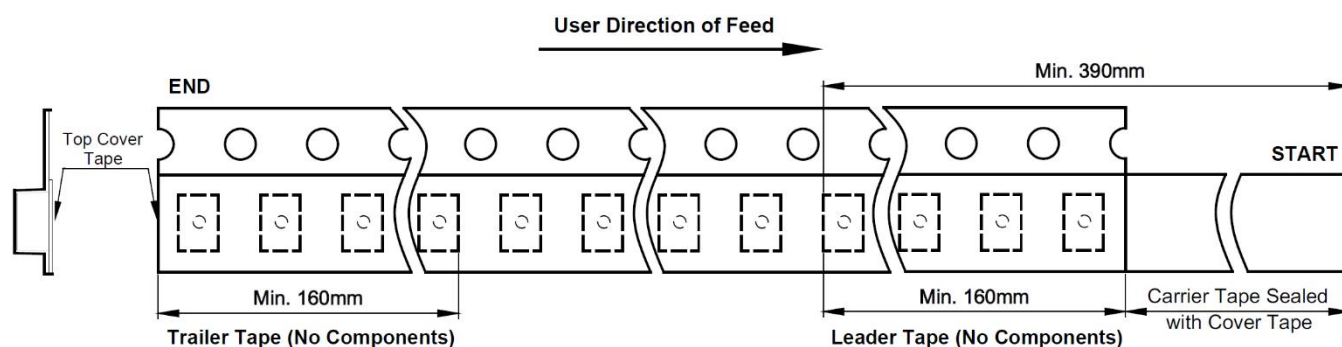
6-3. Surface Mount Reel Specification



Unit:mm

Dimension	Tape Width	Reel Size	A	B	C	D	N	G	T
Value	12 mm	13"	330 ±2	2.0 +0.5-0	13 +0.5-0.2	20.5 ±0.2	100 ±2	12.4 +2.0 -0.0	18.4

6-4. Tape Leader and Trailer Specification



7. Ordering Information

Part Number	Marking Code	Quantity	Component Package	Packaging Option
PxxxxTC	Series	3,000PCS	SMBJ	Tape & Reel- 12mm tape/ 13"reel

8. Version

8-1. History

Version	Date	File No.	Recording	Basis
A	29-May-2019	F11839W	New Create	Market
B	10-Jul-2020		Update Company Info.	System
2.0	17-Apr-2021		Update Version	System
2.1	24-Nov-2021		Update Thermal Considerations	Engineer