TN20H18NTE

N-Channel Enhancement Mode Power MOSFET

Features

- Fast Switching
- Low Reverse transfer capacitances
- Low gate charge and low $R_{DS(on)}$
- V_{DS}= 200V,I_D= 18A
  $R_{DS(on)}$< 0.18Ω @V_{GS}= 10V

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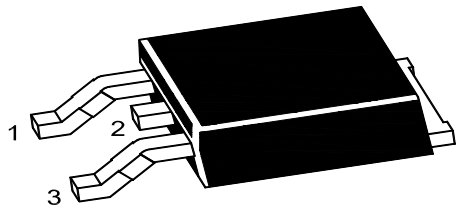
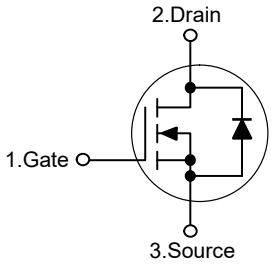


1. Gate 2.Drain 3.Sourse

Schematic Diagram



Applications

- Power switch circuit of PC Power.

Absolute Maximum Ratings

Ratings at 25℃ ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	200	V
Gate-Source Voltage	V_{GS}	±30	V
Drain Current-Continuous	I_D	18	A
Drain Current-Pulsed Note1	I_{DM}	72	A
Single pulse avalanche energy Note4	E_{AS}	950	mJ
Avalanche energy, Repetitive Note1	E_{AR}	90	mJ
Avalanche Current Note1	I_{AR}	4.2	A
Maximum Power Dissipation	P_D	156	W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{STG}	-55 to +150	℃

Thermal Characteristics

Thermal Resistance,Junction-to-Ambient Note2	$R_{\theta JA}$	62.5	°C/W
Maximum Junction-to-Case Note2	$R_{\theta JC}$	0.8	°C/W

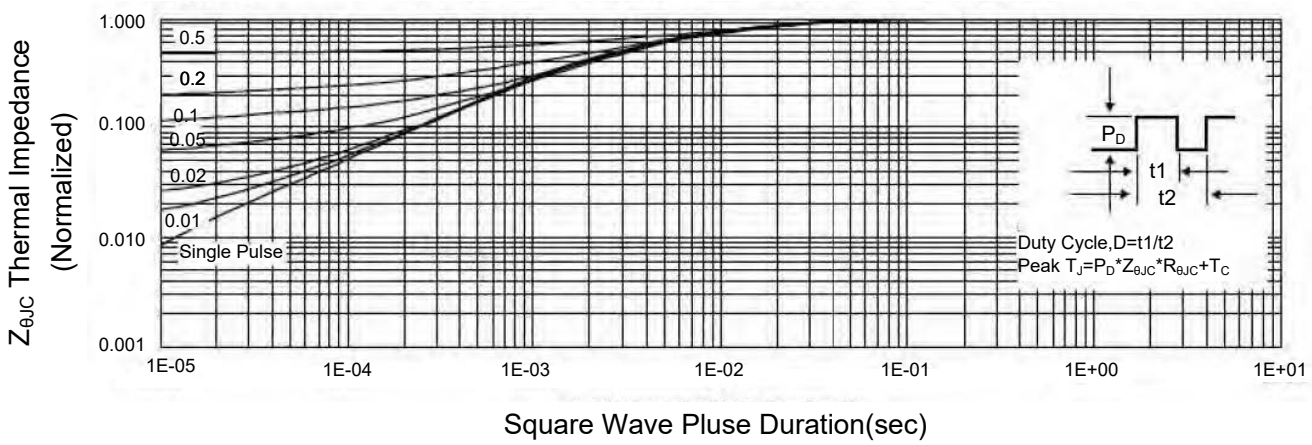
Electrical Characteristics

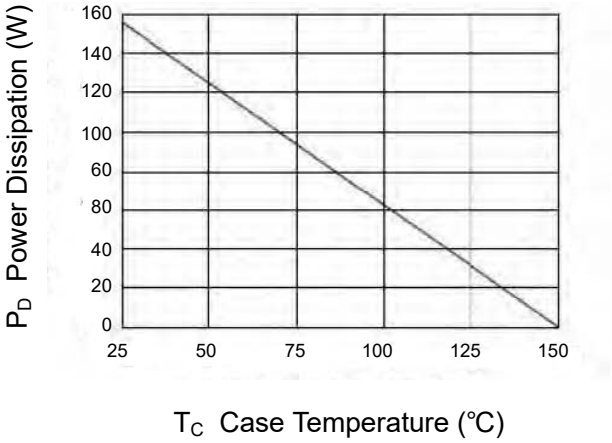
(Ta=25℃ unless otherwise specified)

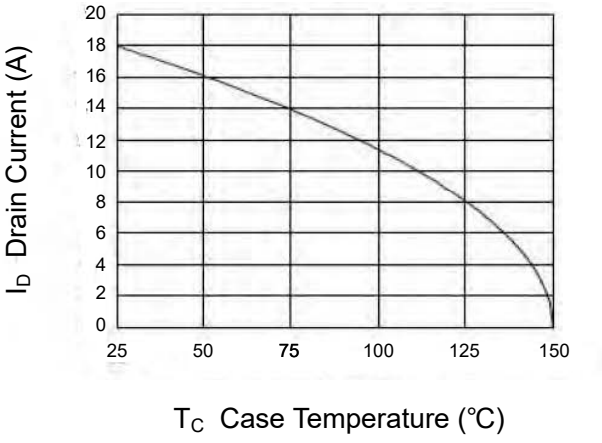
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	200	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=200V,V_{GS}=0V	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±30V,V_{DS}=0V	--	--	±100	nA
Gate Threshold Voltage Note3	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	2	--	4	V
Drain-Source On-Resistance Note3	$R_{DS(on)}$	V_{GS}=10V,I_D=10.8A	--	0.12	0.18	Ω
Forward Transconductance Note3	g_{FS}	V_{DS}=15V,I_D=18A	--	18	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V,f=1MHz	--	1140	--	pF
Output Capacitance	C_{oss}		--	180	--	pF
Reverse Transfer Capacitance	C_{rss}		--	25	--	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=100V,V_{GS}=10V, I_D=18A R_G=2.4Ω	--	11	--	nS
Turn-on Rise Time	t_r		--	13	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	25	--	nS
Turn-off Fall Time	t_f		--	7	--	nS
Total Gate Charge	Q_g	V_{DD}=100V, V_{GS}=10V,I_D=18A	--	24	--	nC
Gate-Source Charge	Q_{gs}		--	7.5	--	nC
Gate-Drain Charge	Q_{gd}		--	9.5	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage Note3	V_{SD}	V_{GS}=0V,I_S=18A	--	--	1.5	V
Diode Forward Current Note2	I_S		--	--	18	A

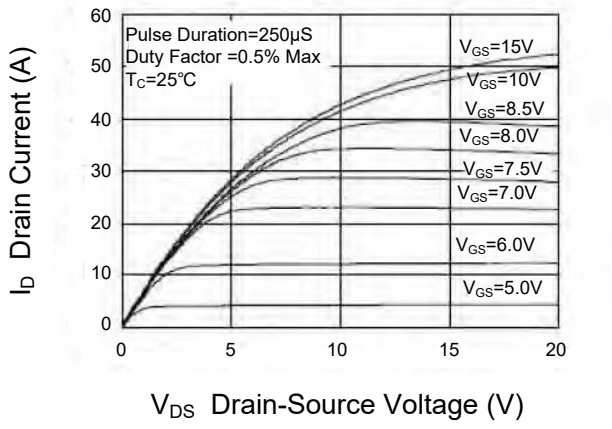
Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse width≤380μs, duty cycle≤2%
4. E_{AS} condition : L=10.0mH, I_D=13.8A, Start T_J=25℃

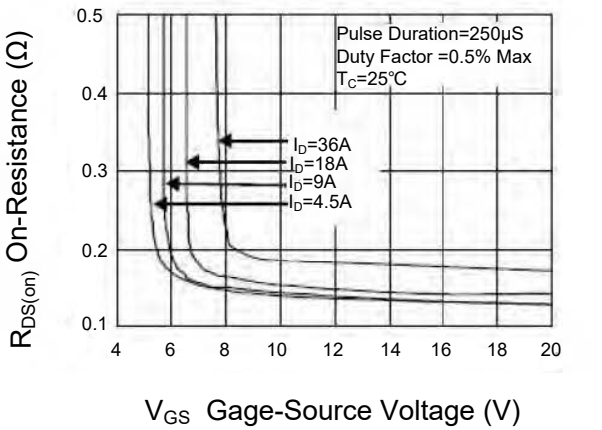
Typical Characteristic Curves

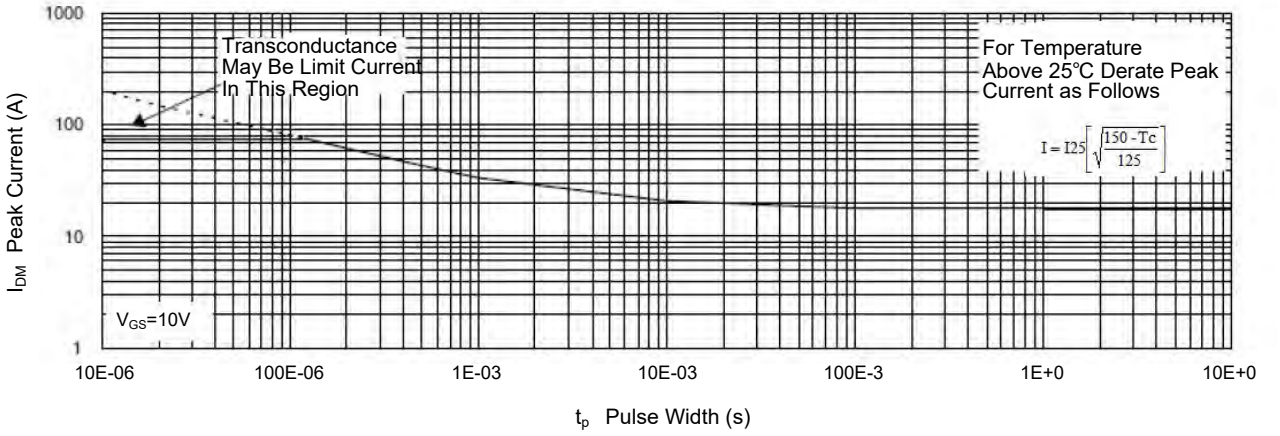


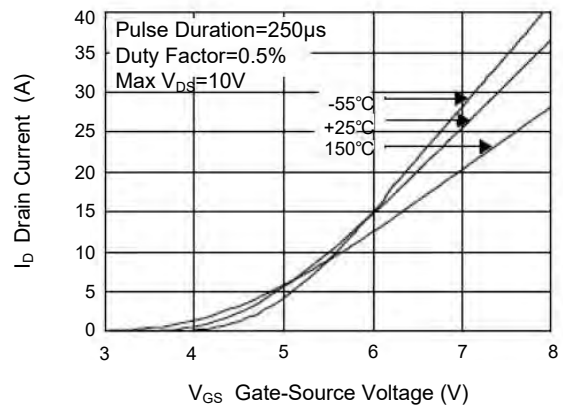


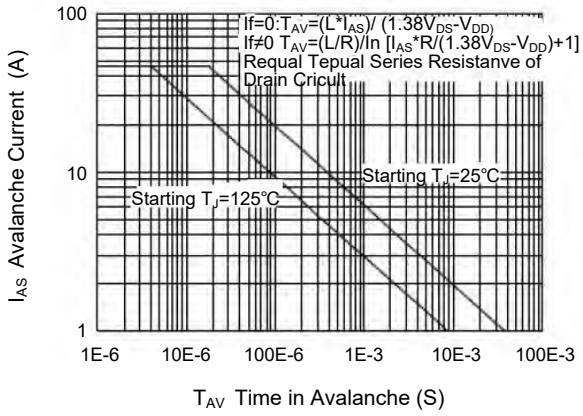


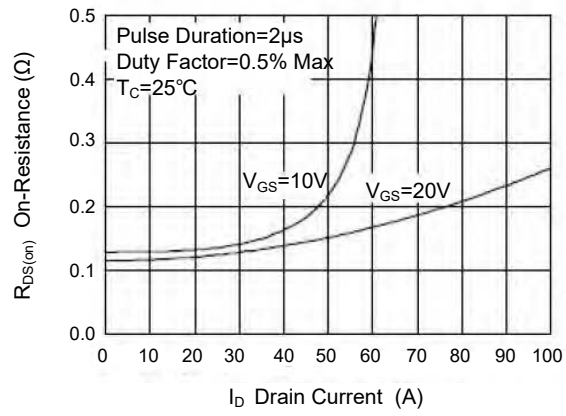


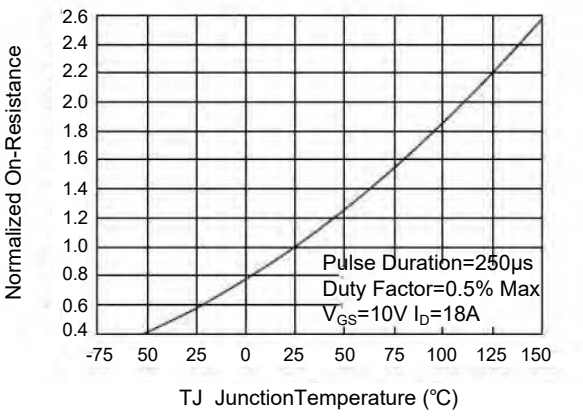


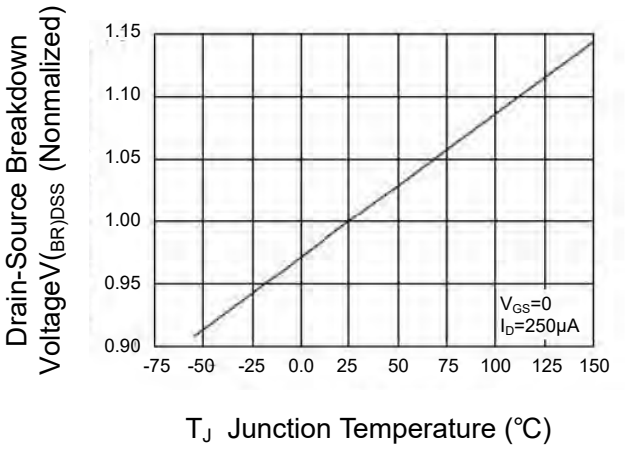


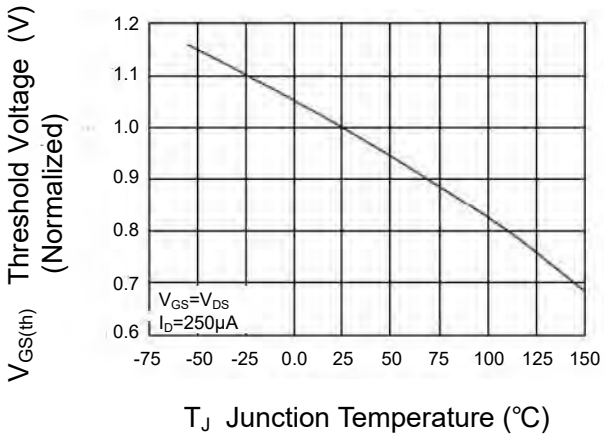


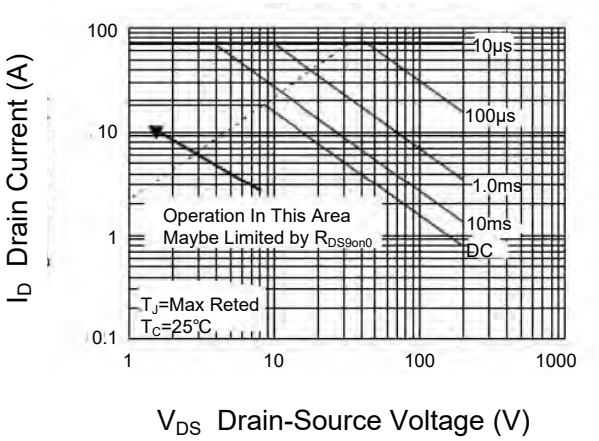


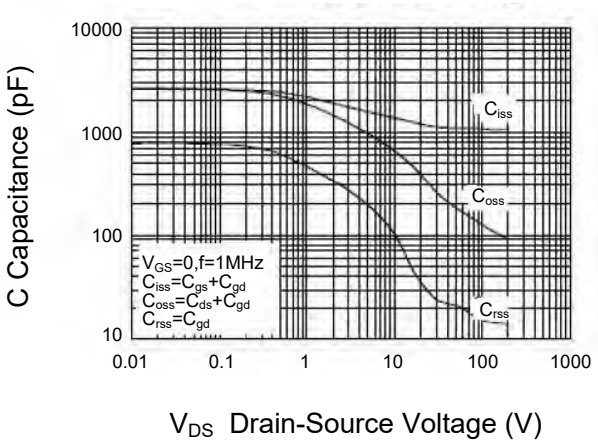


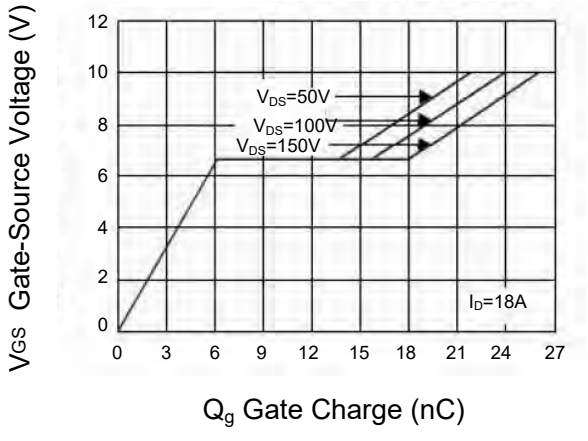


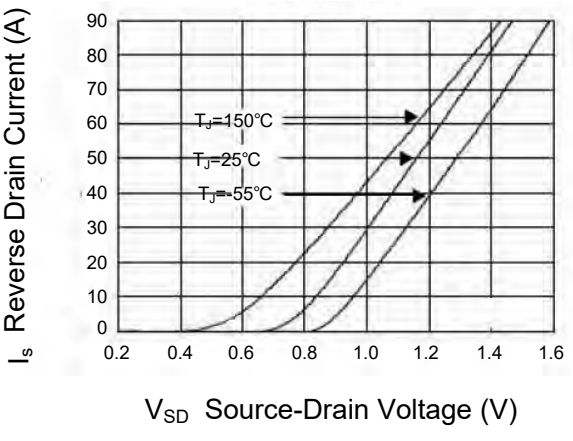












Package Outline

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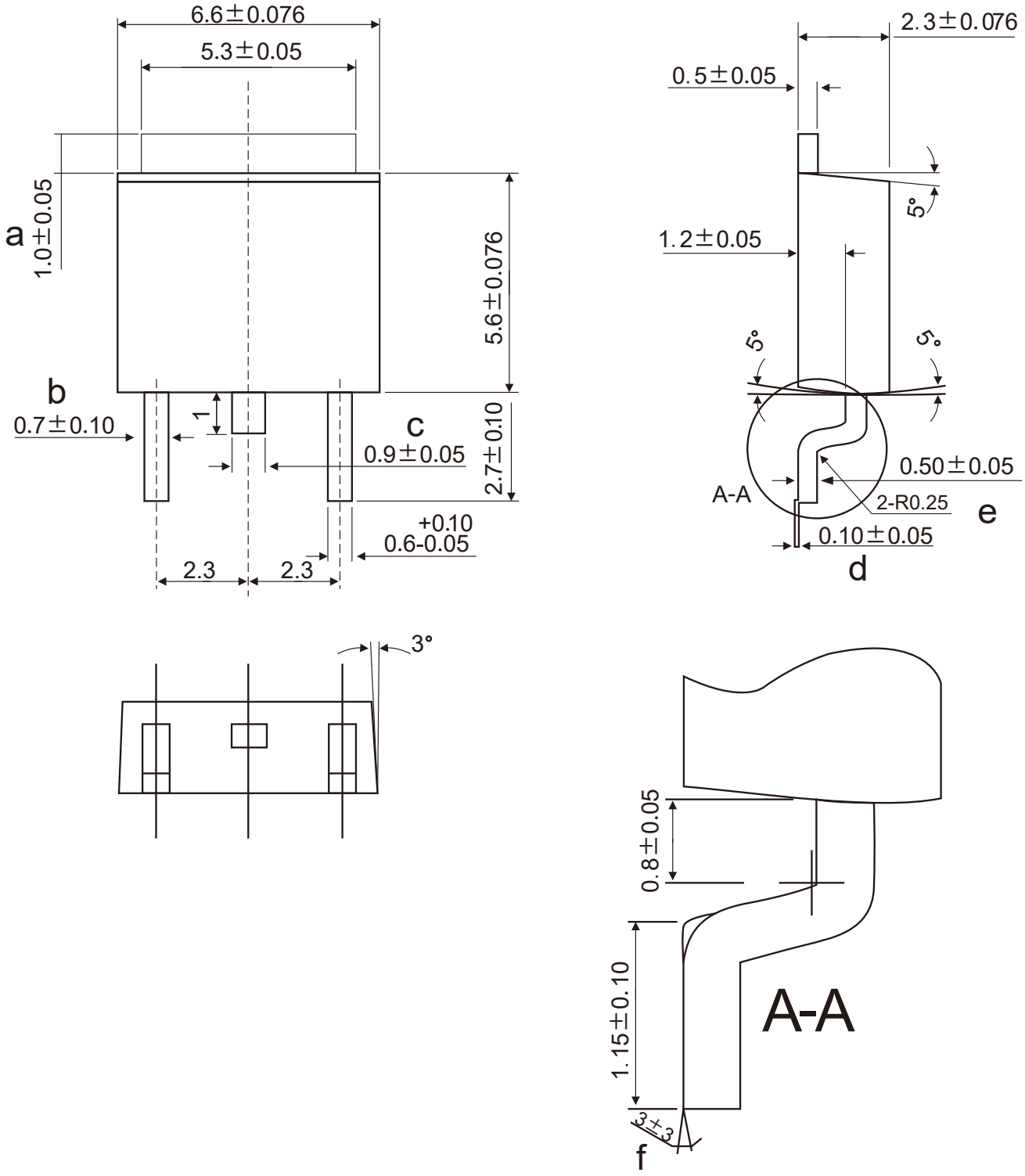
Dimensions in mm



Contact Information

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For additional information, please contact your local Sales Representative.

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