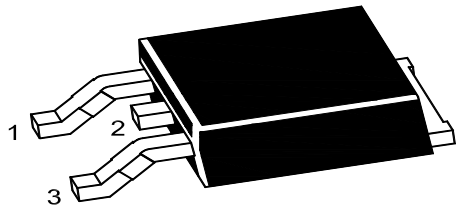
TN10H10NTE
N-Channel Enhancement Mode Power MOSFET

Features

- Excellent package for good heat dissipation
- High density cell design for ultra low $R_{DS(on)}$
- V_{DS}= 100V,I_D= 10A
  $R_{DS(on)}$< 120mΩ @V_{GS}= 10V

TO-252

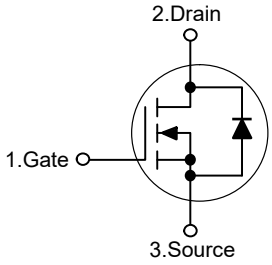


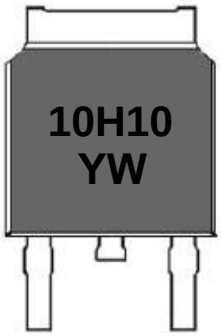
1. Gate 2.Drain 3.Sourse

Applications

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

Schematic Diagram





Marking code										
10H10 YW	10H10: Product code									
	Y: Year code	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
		G	H	J	K	A	B	C	D	E	F
	W: Week code	Weeks		1~26			27~52			53	
		code		A~Z			a~z			z	

Absolute Maximum Ratings

Ratings at 25℃ case temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	10	A
Drain Current-Pulsed Note1	I_{DM}	40	A
Single pulse avalanche energy Note2	E_{AS}	4	mJ
Maximum Power Dissipation	P_D	24	W
Junction Temperature	T_J	175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

Thermal Characteristics

Thermal Resistance,Junction-to-Case	$R_{\theta JC}$	6.3	°C/W

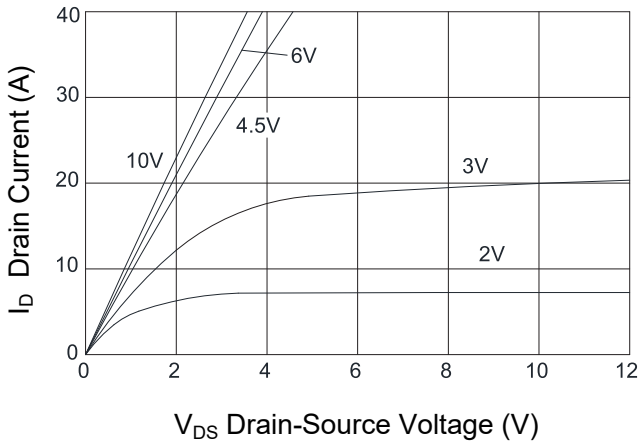
Electrical Characteristics

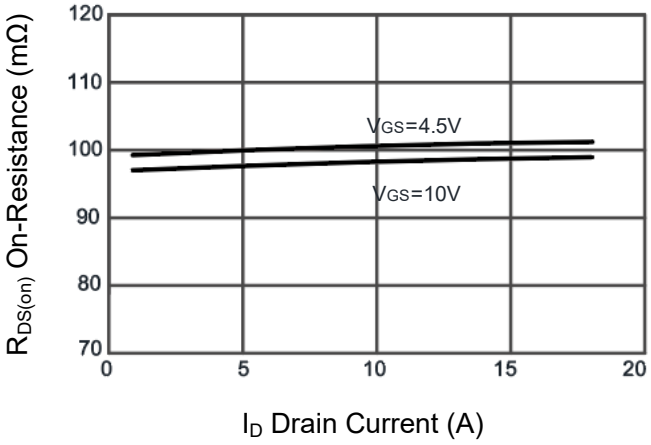
(T_J=25℃ unless otherwise specified)

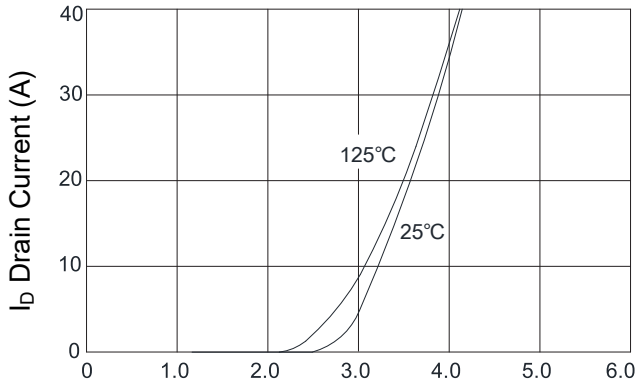
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	100	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V,V_{GS}=0V	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	--	--	±100	nA
Gate Threshold Voltage Note3	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	1	1.5	2.5	V
Drain-Source On-Resistance Note3	$R_{DS(on)}$	V_{GS}=10V,I_D=8A	--	98	120	mΩ
		V_{GS}=4.5V,I_D=5A	--	100	140	mΩ
Forward Transconductance Note3	g_{FS}	V_{DS}=5V,I_D=3A	--	8	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=30V,V_{GS}=0V,f=1MHz	--	825	--	pF
Output Capacitance	C_{oss}		--	37.5	--	pF
Reverse Transfer Capacitance	C_{rss}		--	31.5	--	pF
Gate Resistance	R_g	V_{DS}=0V,V_{GS}=0V,f=1MHz	--	1	--	Ω
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DS}=50V, I_D=3A V_{GS}=10V,R_G=1.8Ω	--	7.5	--	nS
Turn-on Rise Time	t_r		--	6	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	21	--	nS
Turn-off Fall Time	t_f		--	9	--	nS
Total Gate Charge	Q_g	V_{DS}=30V,I_D=2A, V_{GS}=10V	--	18	--	nC
Gate-Source Charge	Q_{gs}		--	2.5	--	nC
Gate-Drain Charge	Q_{gd}		--	4	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=10A	--	0.9	1.2	V
Diode Forward Current	I_S		--	--	10	A

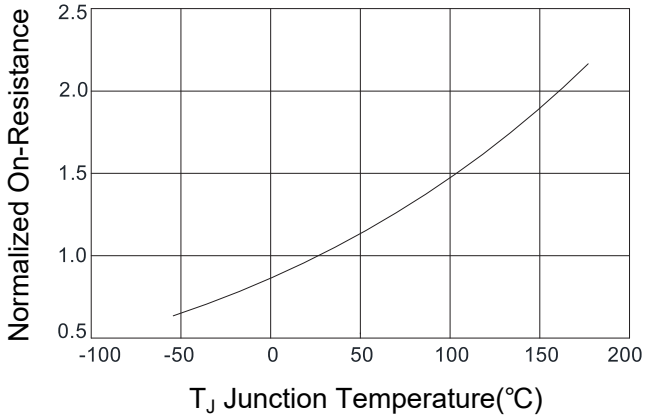
Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. E_{AS} condition : T_J=25℃,V_{DD}=50V,V_{GS}=10V,L=0.5mH,R_g=25Ω,I_{AS}=4A.
3. Pulse Test: Pulse width≤300μs, duty cycle≤0.5%.

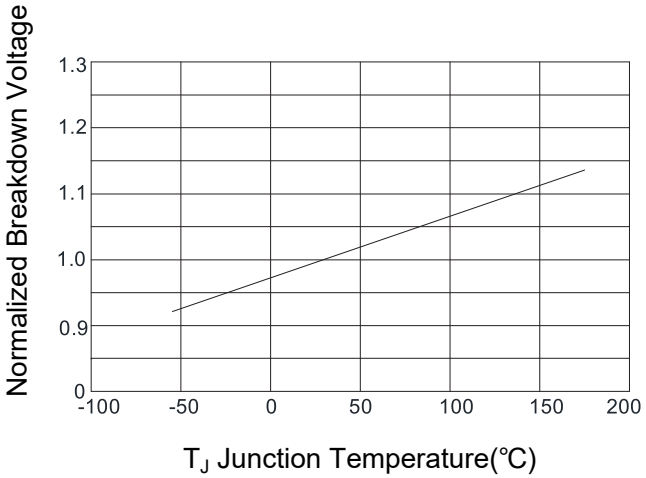
Typical Characteristic Curves

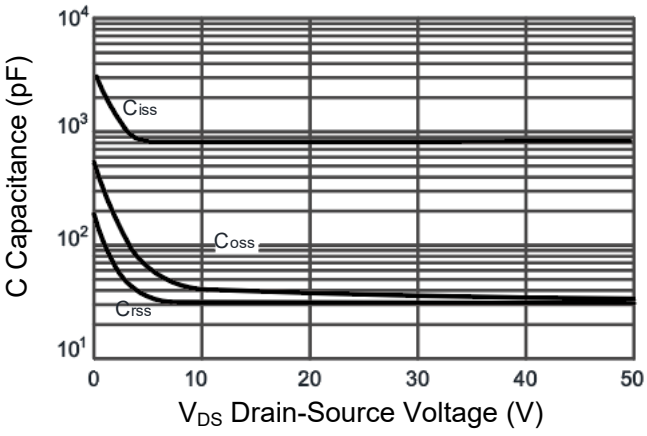


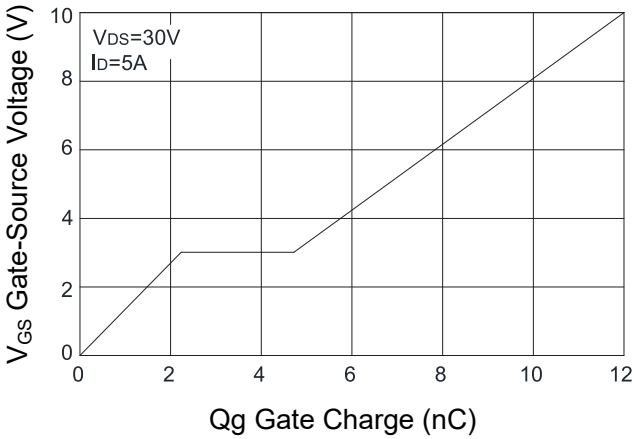


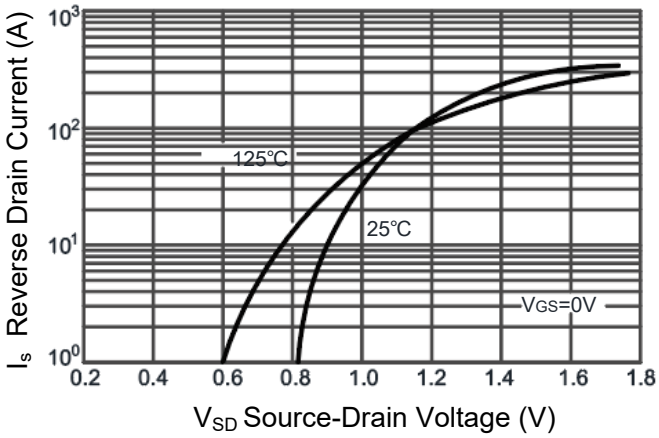


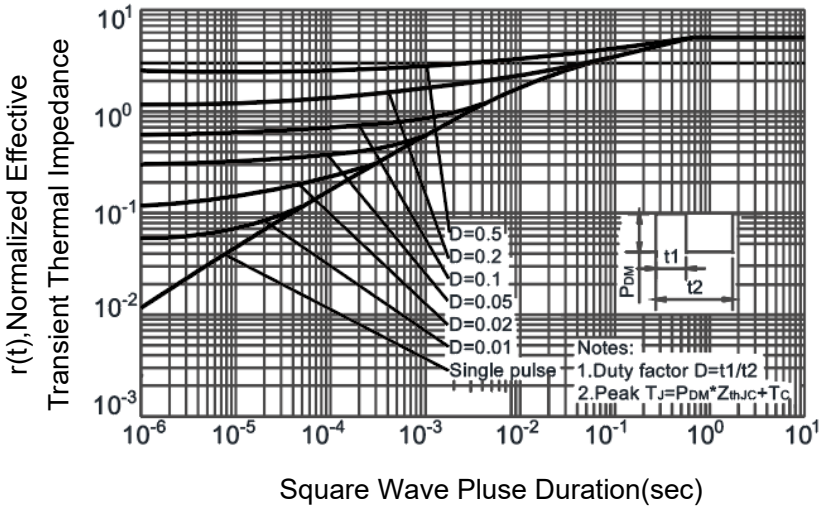








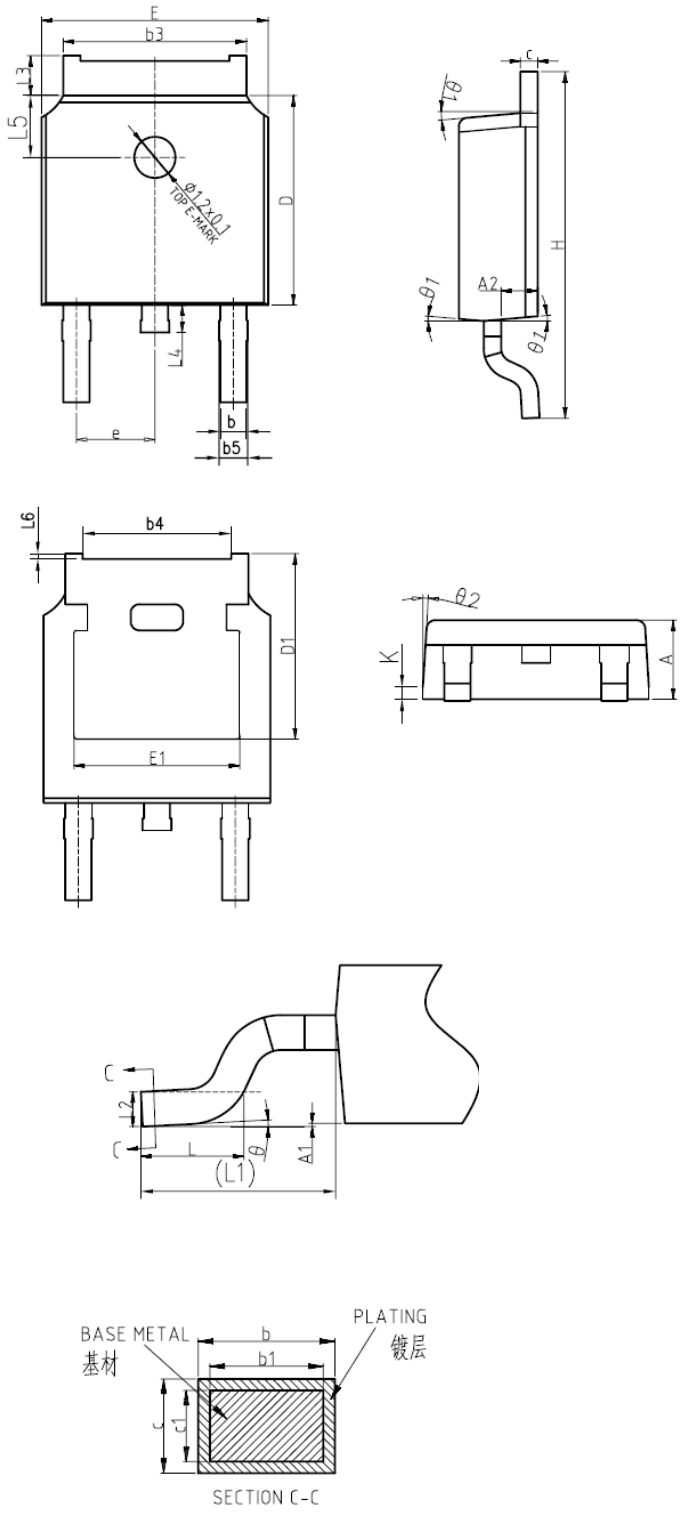




Package Outline

TO-252

Dimensions in mm



Symbol	mm		
	Min.	Nom.	Max.
*A	2.20	2.30	2.38
*A1	0.00	--	0.10
A2	0.97	1.07	1.17
*b	0.72	0.78	0.85
b1	0.71	0.76	0.81
*b3	5.23	5.33	5.46
b4	4.27	4.32	4.37
b5	0.72	0.88	0.93
*c	0.47	0.53	0.58
c1	0.46	0.51	0.56
*D	6.00	6.10	6.20
D1	5.30REF		
*E	6.50	6.60	6.70
E1	4.70	4.83	4.92
*e	2.286BSC		
*H	9.90	10.10	10.30
L	1.40	1.50	1.70
L1	2.90REF		
L2	0.51BSC		
*L3	0.90	--	1.25
*L4	0.60	0.80	1.00
L5	1.70	1.80	1.90
L6	0	0.047	0.123
θ	0°	--	8°
*θ1	5°	7°	9°
θ2	5°	7°	9°
K	0.40REF		
带*为检验尺寸			

Ordering Information

Device	Package	Shipping
TN10H10NTE	TO-252	2,500PCS/Reel&13inches

Contact Information

TANI website: **http://www.tanisemi.com** Email:tani@tanisemi.com

For additional information, please contact your local Sales Representative.

Product Specification Statement

The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. TANI shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and TANI assumes no responsibility for the application of the product. TANI strives to provide accurate and up -to- date information to the best of our ability. However, due to technical, human, or other reasons, TANI cannot guarantee that the information provided in the product specification is entirely accurate and error-free. TANI shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications.

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Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

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