



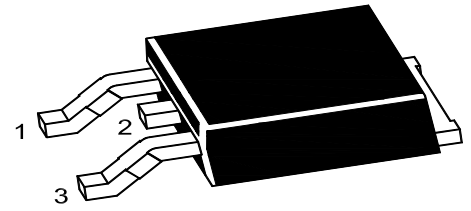
PJM10H45NTE

N-Channel Enhancement Mode Power MOSFET

Features

- Excellent package for good heat dissipation
- High density cell design for ultra low $R_{DS(on)}$
- $V_{DS} = 100V, I_D = 45A$
 $R_{DS(on)} < 20m\Omega @ V_{GS} = 10V$

TO-252

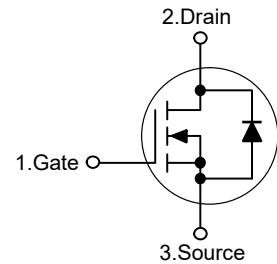


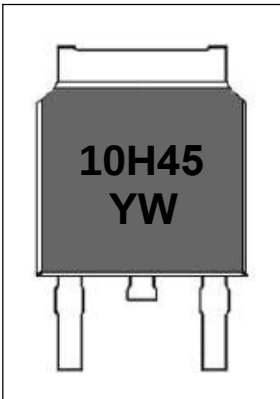
1. Gate 2. Drain 3. Source

Applications

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

Schematic Diagram



	Marking code											
	10H45 YW	10H45: 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°C ambient 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	45	A
Drain Current-Pulsed ^{Note1}	I_{DM}	180	A
Single pulse avalanche energy ^{Note4}	E_{AS}	81	mJ
Maximum Power Dissipation $T_c=25^\circ C$	P_D	72	W
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ C$

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	50	$^\circ C/W$
Maximum Junction-to-Case ^{Note2}	$R_{\theta JC}$	1.73	$^\circ C/W$



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Electrical Characteristics

(T_C=25°C 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	1.0	1.8	2.5	V
Drain-Source On-Resistance ^{Note3}	R _{DS(on)}	V _{GS} =10V,I _D =20A	--	14	20	mΩ
		V _{GS} =4.5V,I _D =10A	--	18	25	mΩ
Forward Transconductance ^{Note3}	g _{FS}	V _{DS} =5V,I _D =3A	--	15	--	S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =30V,V _{GS} =0V,f=1MHz	--	1135	--	pF
Output Capacitance	C _{oss}		--	399	--	pF
Reverse Transfer Capacitance	C _{rss}		--	18	--	pF
Gate Resistance	R _g	V _{DS} =0V,V _{GS} =0V,f=1MHz	--	0.6	--	Ω
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =50V, I _D =25A V _{GS} =10V,R _{GEN} =2.2Ω	--	39.2	--	nS
Turn-on Rise Time	t _r		--	11	--	nS
Turn-off Delay Time	t _{d(off)}		--	53.2	--	nS
Turn-off Fall Time	t _f		--	15.8	--	nS
Total Gate Charge	Q _g	V _{DS} =50V,I _D =25A, V _{GS} =10V	--	16	--	nC
Gate-Source Charge	Q _{gs}		--	5.6	--	nC
Gate-Drain Charge	Q _{gd}		--	2.4	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	V _{SD}	V _{GS} =0V,I _S =20A	--	0.9	1.3	V
Diode Forward Current ^{Note2}	I _S		--	--	45	A

Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. The value of R_{θJA} is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with T_A=25°C. The Power dissipation PDSM is based on R_{θJA} ≤ 10s and the maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design.

3. Pulse Test: Pulse width ≤ 300μs, duty cycle ≤ 2%.

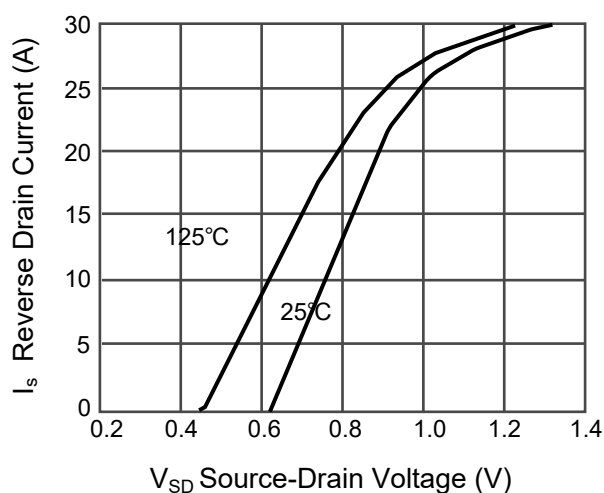
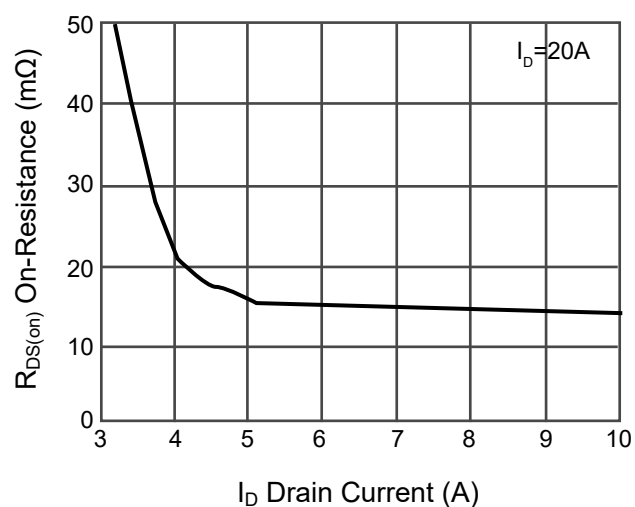
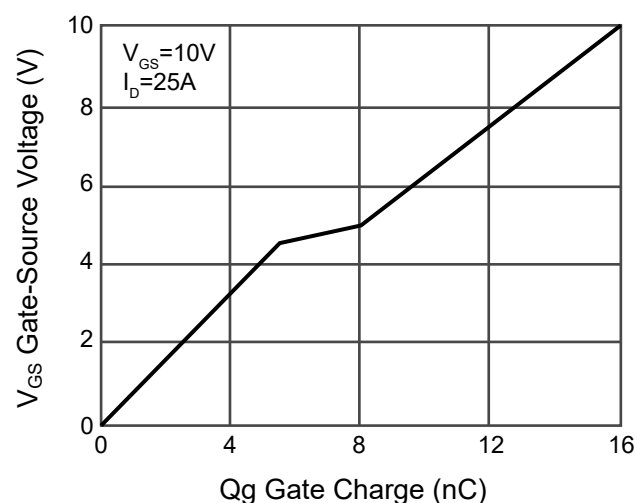
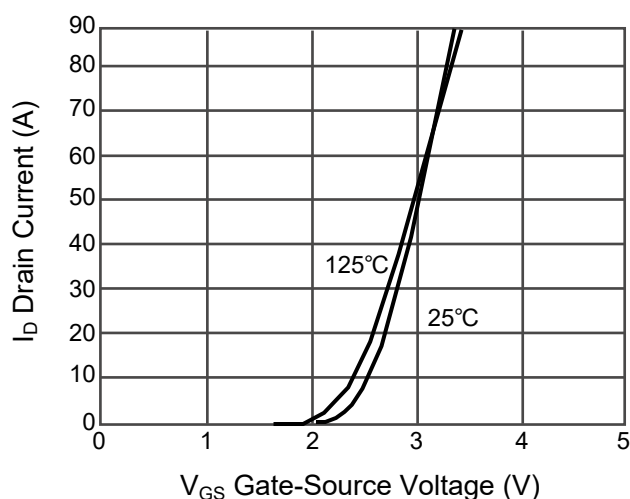
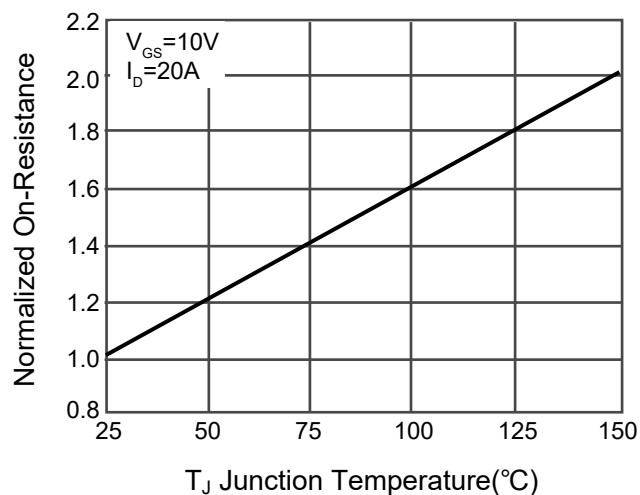
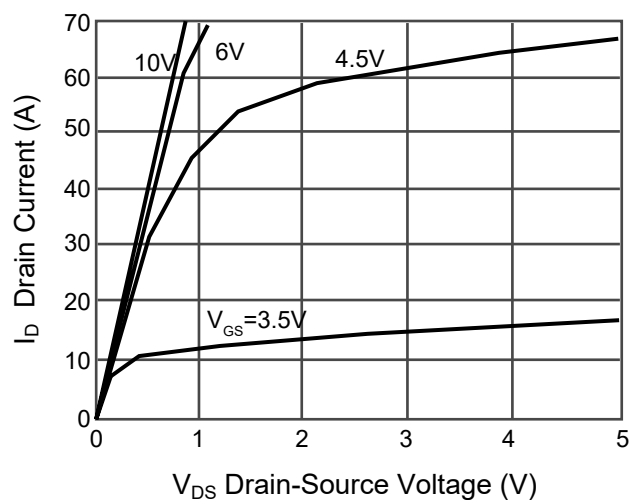
4. E_{AS} condition : T_J=25°C, V_{DD}=50V, V_{GS}=10V, L=0.5mH, R_G=25Ω, I_{AS}=15A.



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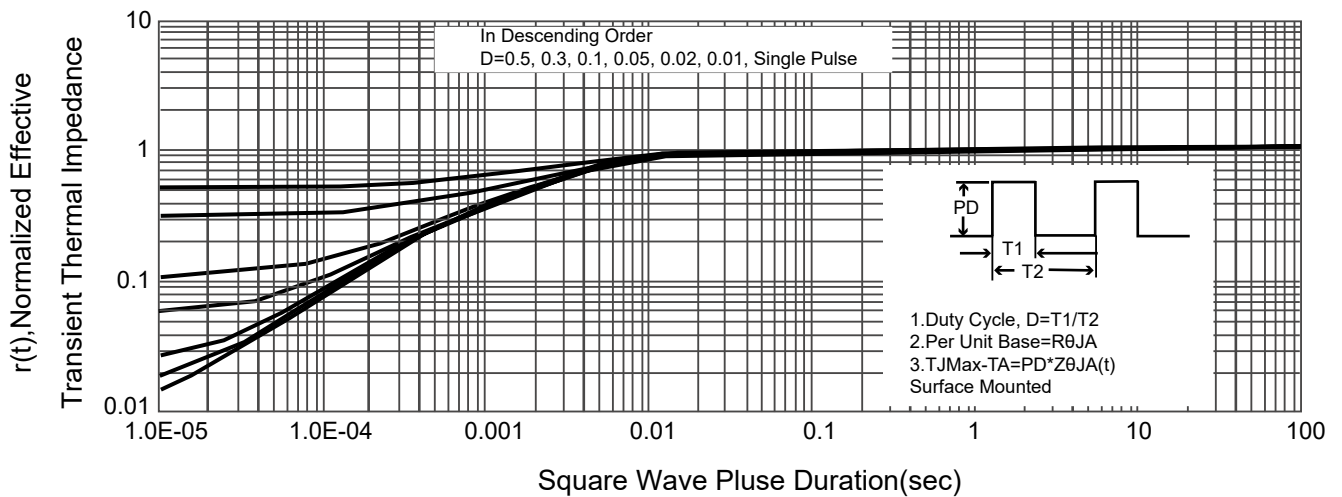
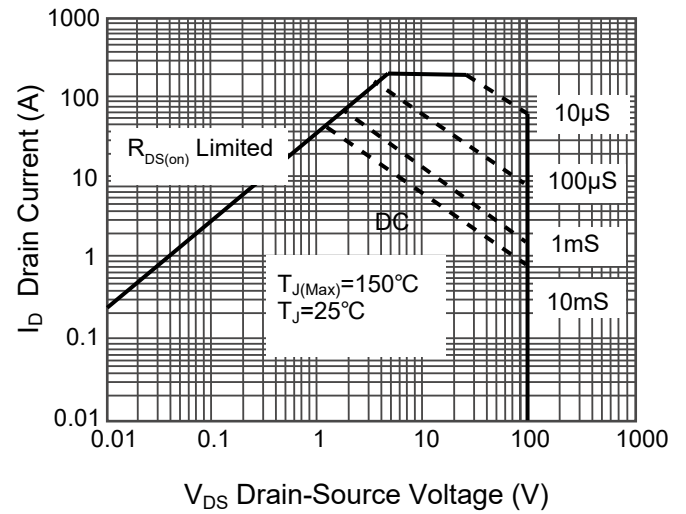
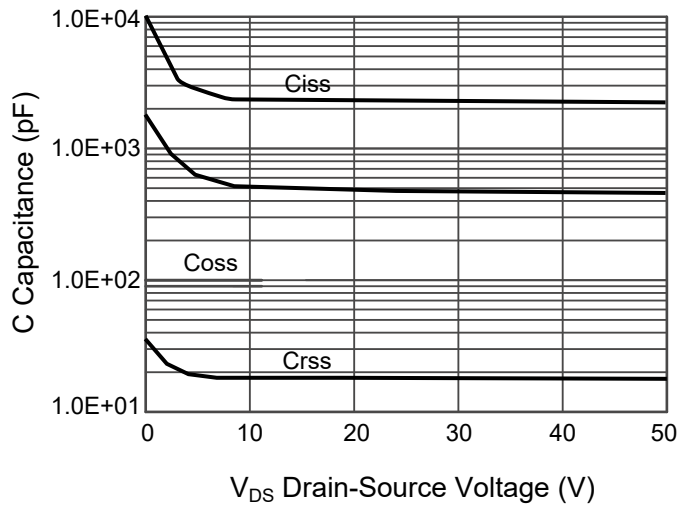
Typical Characteristic Curves





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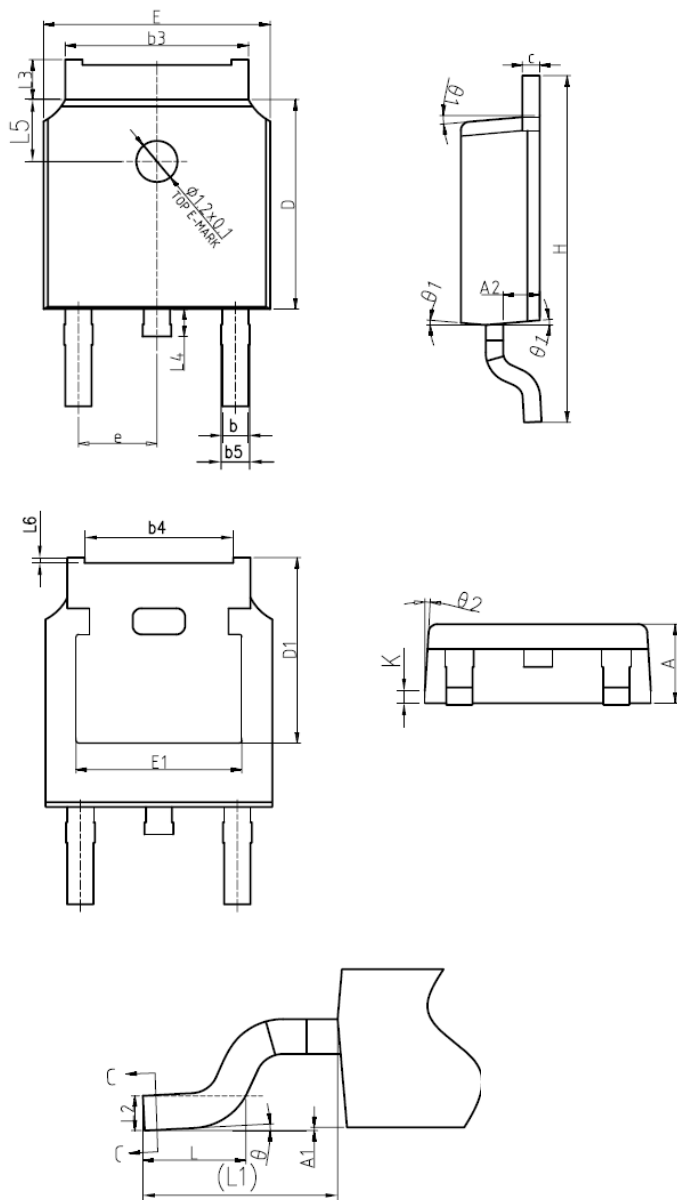
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Package Outline

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
PJM10H45NTE	TO-252	2,500PCS/Reel&13inches