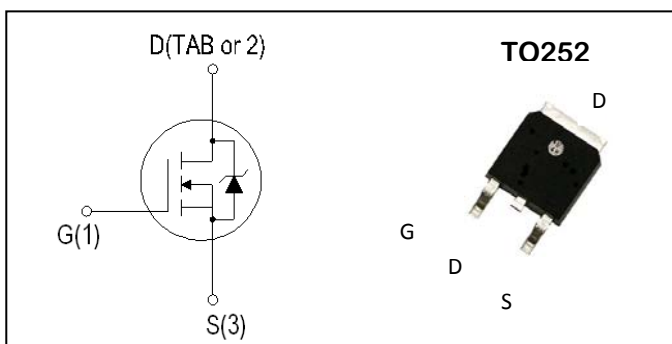


N-Channel Enhancement Mode Field Effect Transistor**PRODUCT SUMMARY**

V_{DSS}	I_D	$R_{DS(ON)} (m\Omega)$
30V	105A	4.0m Ω

**Absolute Maximum Ratings** ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter		Ratings	Unit
Common Ratings				
V _{BSS}	Drain-Source Voltage		30	V
V _{GSS}	Gate-Source Voltage		± 20	
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 175	°C
I _S	Diode Continuous Forward Current	T _C =25°C	100	A
Mounted on Large Heat Sink				
I _{DM}	300μs Pulse Drain Current Tested(1)	T _C =25°C	400	A
I _D	Continuous Drain Current	T _C =25°C	105	A
		T _C =100°C	65	
P _D	Maximum Power Dissipation	T _C =25°C	88	W

1. Pulse width limited by maximum junction temperature.

Thermal Characteristics

Symbol	Parameter	Ratings	Unit
R_{thJC}	Thermal resistance junction-case max	1.7	$^\circ\text{C/W}$
R_{thJA}	Thermal resistance junction-ambient max	82	$^\circ\text{C/W}$

Electrical Characteristics (TA=25°C Unless Otherwise Noted)

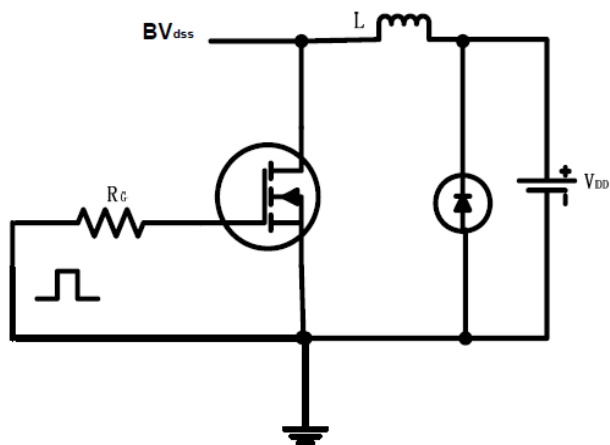
Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
On/off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250uA	30	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 24V, V _{GS} =0V	--	--	1	uA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250uA	1	1.6	2.5	V
I _{GSS}	Gate Leakage Current	V _{GS} =± 20V, V _{DS} =0V	--	--	± 100	nA
R _{DS(ON)}	Drain-SourceOn-stateResistance(2)	V _{GS} = 10V, I _{DS} =24A	--	3.0	4.0	mΩ
		V _{GS} = 4.5V, I _{DS} =12A	--	4.5	6	
g _{FS}	Forward transconductance(2)	V _{DS} = 10V, I _{DS} =10A	--	15.5	--	S
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{GS} =0V,	--	2200	--	pF
C _{oss}	Output Capacitance	V _{DS} = 25V,	--	280	--	
C _{rss}	Reverse Transfer Capacitance	Frequency=1.0MHz	--	177	--	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time(1)	V _{DD} =15V,	--	12.6	--	ns
t _r	Turn-on Rise Time(1)	I _D = 15A, V _{GS} = 10V,	--	19.5	--	
t _{d(OFF)}	Turn-off Delay Time(1)	R _{GEN} =3.3 Ω	--	42.8	--	
t _f	Turn-off Fall Time(1)		--	13.2	--	
Q _g	Total Gate Charge(1)	V _{DS} =15V, V _{GS} = 10V,	--	42	--	nC
Q _{gs}	Gate-Source Charge(1)	I _{DS} =24A	--	4	--	
Q _{gd}	Gate-Drain Charge(1)		--	13	--	
Diode Characteristics						
V _{SD}	Diode Forward Voltage(2)	I _{SD} = 1A, V _{GS} = 0	--	--	1.2	V
t _{rr}	Reverse Recovery Time	I _{SD} =30A, dI _{SD} /dt=100A/μs	--	19.0	--	ns
q _{rr}	Reverse Recovery Charge		--	11.0	--	nC

NOTES:

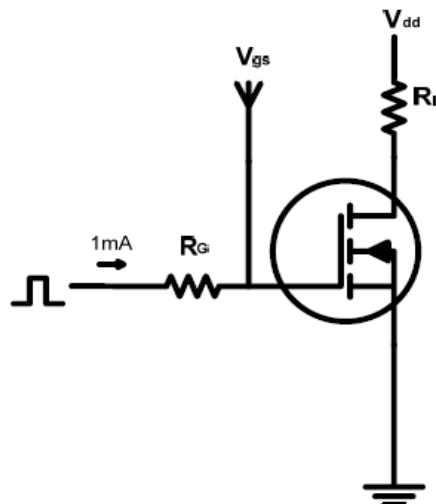
1. Independent of operating temperature.
2. Pulse Test : Pulse width ≤ 300 μs, Duty cycle ≤ 2%

Test circuits and Waveforms

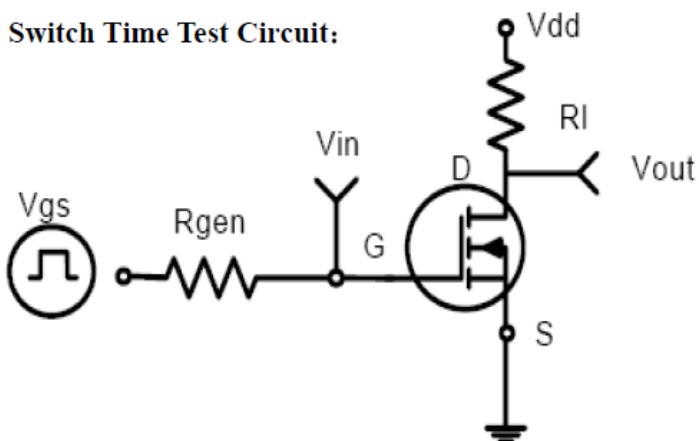
EAS test circuits:



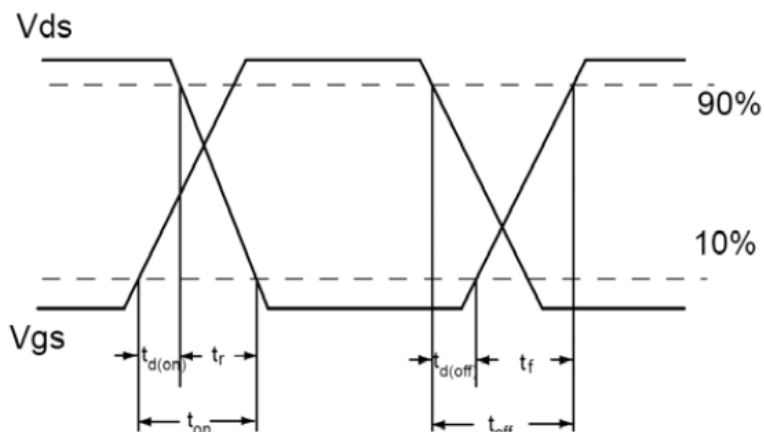
Gate charge test circuit:



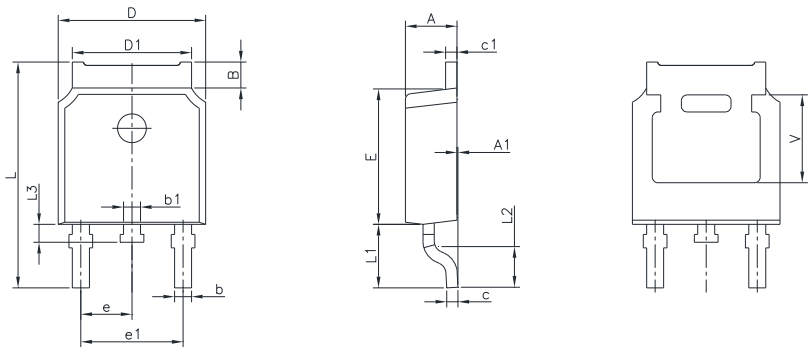
Switch Time Test Circuit:



Switch Waveforms:



PACKAGE MECHANICAL DATA
TO-252-2 Package Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
B	1.070	1.220	0.042	0.048
b	0.720	0.850	0.028	0.033
b1	0.720	0.850	0.028	0.033
c	0.450	0.620	0.017	0.024
c1	0.450	0.620	0.017	0.024
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.900	6.200	0.232	0.244
e	2.300 TYP.		0.091 TYP.	
e1	4.500	4.700	0.177	0.185
L	9.500	10.60	0.374	0.396
L1	2.550	2.900	0.100	0.114
L2	1.400	1.780	0.055	0.070
L3	0.600	0.900	0.024	0.035
V	3.950 REF.		0.155 REF.	

Ordering information

Part number	Package	Marking	Packing	Quantity
ADM105N03E	TO-252-2	ADM105N03E	Tube	80pcs
			Embossed tape	2500pcs