



200V N-Channel MOSFETs

General Description

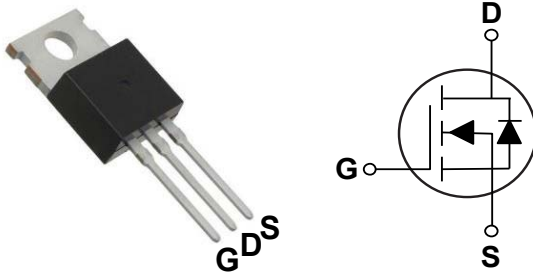
These N-Channel enhancement mode power field effect transistors are using trench MOS technology. This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficiency fast switching applications.

BV_{DSS}	$R_{DS(ON)}$	I_D
200 V	140 mΩ	40 A

Features

- $R_{DS(ON)} \leq 140m\Omega @ V_{GS}=10V$
- Fast Switching
- Green Device Available

TO-220 Pin Configuration



Applications

- UPS
- Synchronous Rectification
- Automotive
- Isolated DC/DC Converters in Telecom and Industrial

Absolute Maximum Ratings $T_C=25^\circ C$ unless otherwise noted

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	200	V
V_{GS}	Gate-Source Voltage	± 30	V
I_D	Drain Current – Continuous ($T_C=25^\circ C$)	40	A
I_{DM}	Drain Current – Pulsed (NOTE 1)	160	A
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ C$
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ C$
Marking Code		NS140	

**Electrical Characteristics (T_J=25°C, unless otherwise noted)****Off Characteristics**

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	200	---	---	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =200V, V _{GS} =0V	---	---	10	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±30V, V _{DS} =0V	---	---	±100	nA

On Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V, I _D =26A	---	---	140	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	2.0	---	4.0	V

Dynamic and switching Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, F=1MHz	---	2775	---	pF
C _{oss}	Output Capacitance		---	283	---	
C _{rss}	Reverse Transfer Capacitance		---	920	---	

Drain-Source Diode Characteristics and Ratings

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Body Diode Current		---	---	40	A
I _{SM}	Pulsed Diode Forward Current		---	---	80	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =26A	---	---	1.5	V

NOTES :

1. Repetitive Rating : Pulsed width limited by maximum junction temperature.
2. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%.



Characteristics Curves

FIG. 1- Switching Time Waveform

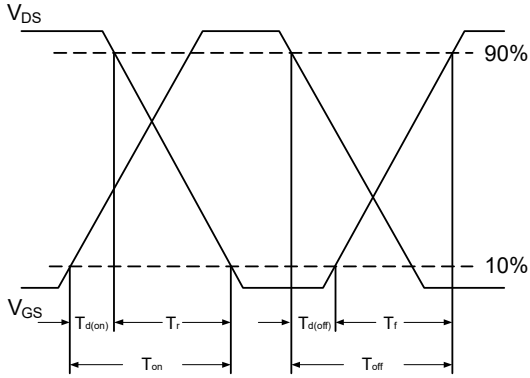
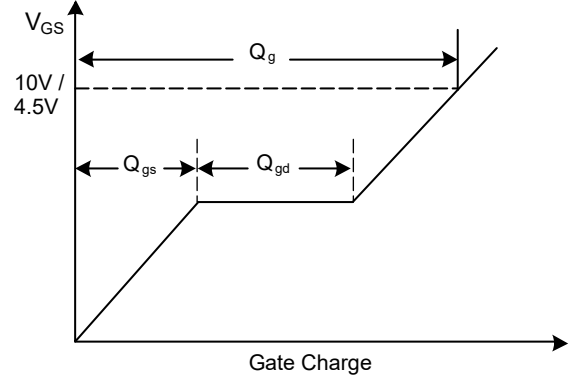
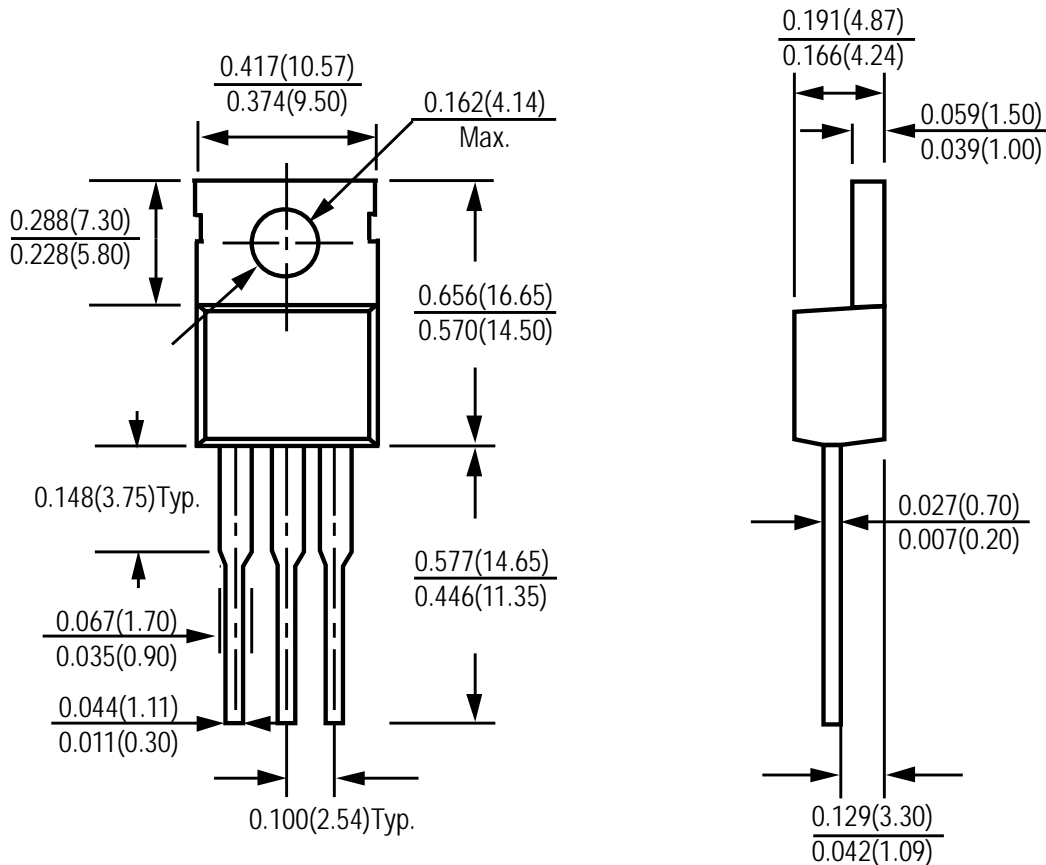


FIG. 2- Gate Charge Waveform



Package Outline Dimensions



TO-220

Dimensions in inches and (millimeters)



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