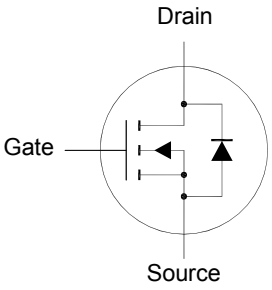
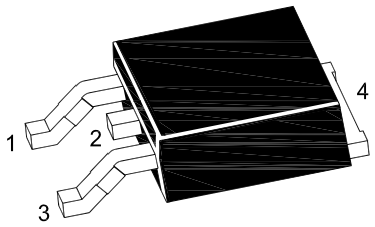
SFTN9980R-HAF

N-Channel Enhancement Mode MOSFET

Features

- Halogen and Antimony Free(HAF), RoHS compliant





1. Gate 2. Drain 3. Source 4. Drain
TO-252 Plastic Package

Absolute Maximum Ratings(T_a = 25℃)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	80	V
Gate-Source Voltage	V_{GS}	± 25	V
Drain Current T_C = 25℃ T_C = 100℃	I_D	21.3 13.4	A
Peak Drain Current [1]	I_{DM}	80	A
Power Dissipation T_C = 25℃	P_D	41.7	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	- 55 to + 150	℃

Thermal Resistance Ratings

Parameter	Symbol	Max.	Unit
Thermal Resistance from Juntion to Ambient [2]	$R_{\theta JA}$	62.5	℃/W
Maximum Thermal Resistance from Juntion to Case	$R_{\theta JC}$	3	℃/W

[1] Pulse width limited by Max. junction temperature.
[2] Surface mounted on 1 in^2 copper pad of FR4 board.

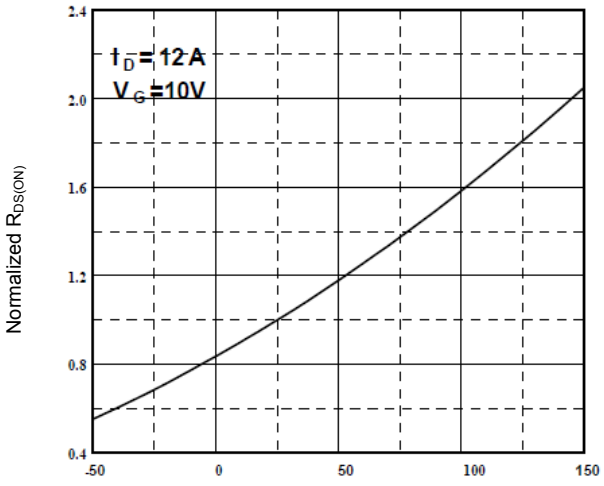
Characteristics at T_a= 25℃ unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at I_D = 250 µA	$V_{(BR)DSS}$	80	-	-	V
Zero Gate Voltage Drain Current at V_{DS} = 80 V at V_{DS} = 64 V, T_J = 125˚C	I_{DSS}	- -	- -	10 100	µA
Gate-Source Leakage at V_{GS} = ± 25 V	I_{GSS}	-	-	± 100	nA
Gate-Source Threshold Voltage at V_{DS} = V_{GS}, I_D = 250 µA	$V_{GS(th)}$	1	-	3	V
Drain-Source On-State Resistance at V_{GS} = 10 V, I_D = 12 A at V_{GS} = 4.5 V, I_D = 8 A	$R_{DS(on)}$	- -	- -	45 55	mΩ
Forward Transconductance at V_{DS} = 10 V, I_D = 12 A	$\lvert g_{FS} \rvert$	-	20	-	S
Input Capacitance at V_{DS} = 25 V, V_{GS} = 0 V, f = 1 MHz	C_{iss}	-	-	2900	pF
Output Capacitance at V_{DS} = 25 V, V_{GS} = 0 V, f = 1 MHz	C_{oss}	-	135	-	pF
Reverse Transfer Capacitance at V_{DS} = 25 V, V_{GS} = 0 V, f = 1 MHz	C_{rss}	-	96	-	pF
Turn-On Delay Time at V_{DS} = 40 V, I_D = 12 A, V_{GS} = 10 V, R_G = 3.3 Ω	$t_{d(on)}$	-	11	-	ns
Turn-On Rise Time at V_{DS} = 40 V, I_D = 12 A, V_{GS} = 10 V, R_G = 3.3 Ω	t_r	-	20	-	ns
Turn-Off Delay Time at V_{DS} = 40 V, I_D = 12 A, V_{GS} = 10 V, R_G = 3.3 Ω	$t_{d(off)}$	-	29	-	ns
Turn-Off Fall Time at V_{DS} = 40 V, I_D = 12 A, V_{GS} = 10 V, R_G = 3.3 Ω	t_f	-	30	-	ns

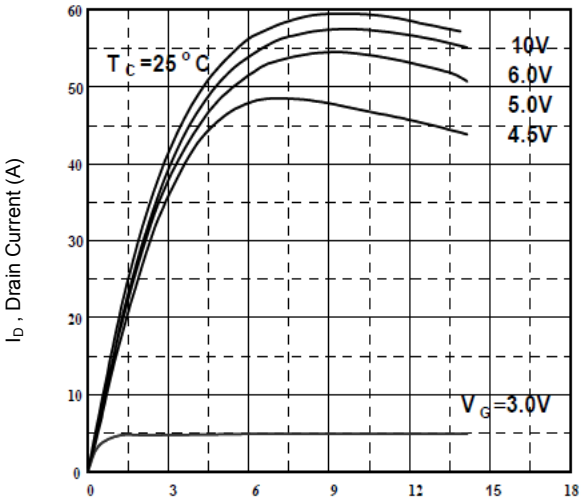
Drain-Source Body Diode Rating Characteristics

Parameter	Symbol	Max.	Unit
Drain-Source Diode Forward Voltage [1] at I_S = 20 A	V_{SD}	1.2	V

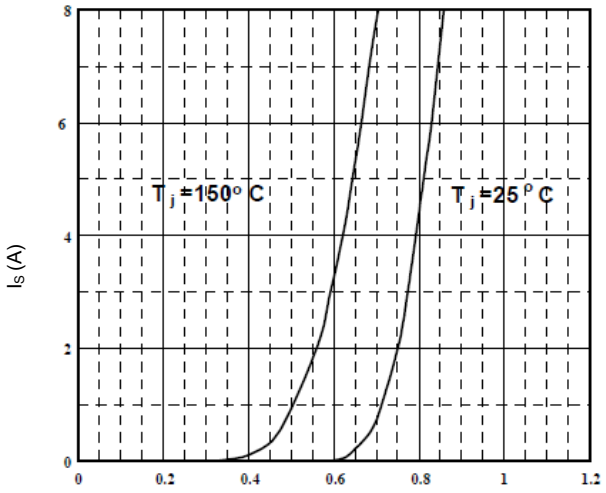
[1] Pulse Test



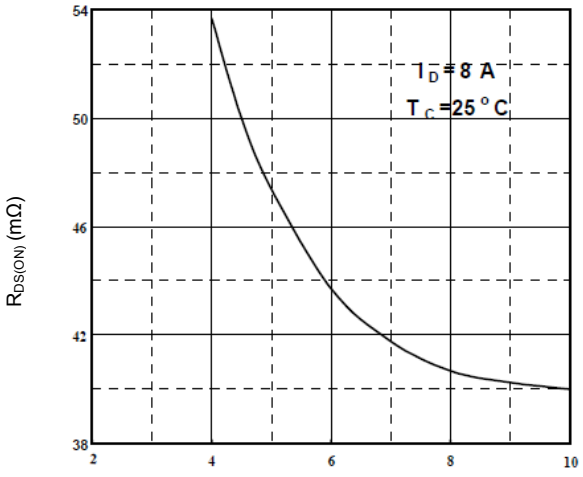
T_J , Junction Temperature (^oC)
Figure 1. Normalized On Resistance v.s. Junction Temperature



V_{DS} , Drain to Source Voltage (V)
Figure 2.Typical Output Characteristics

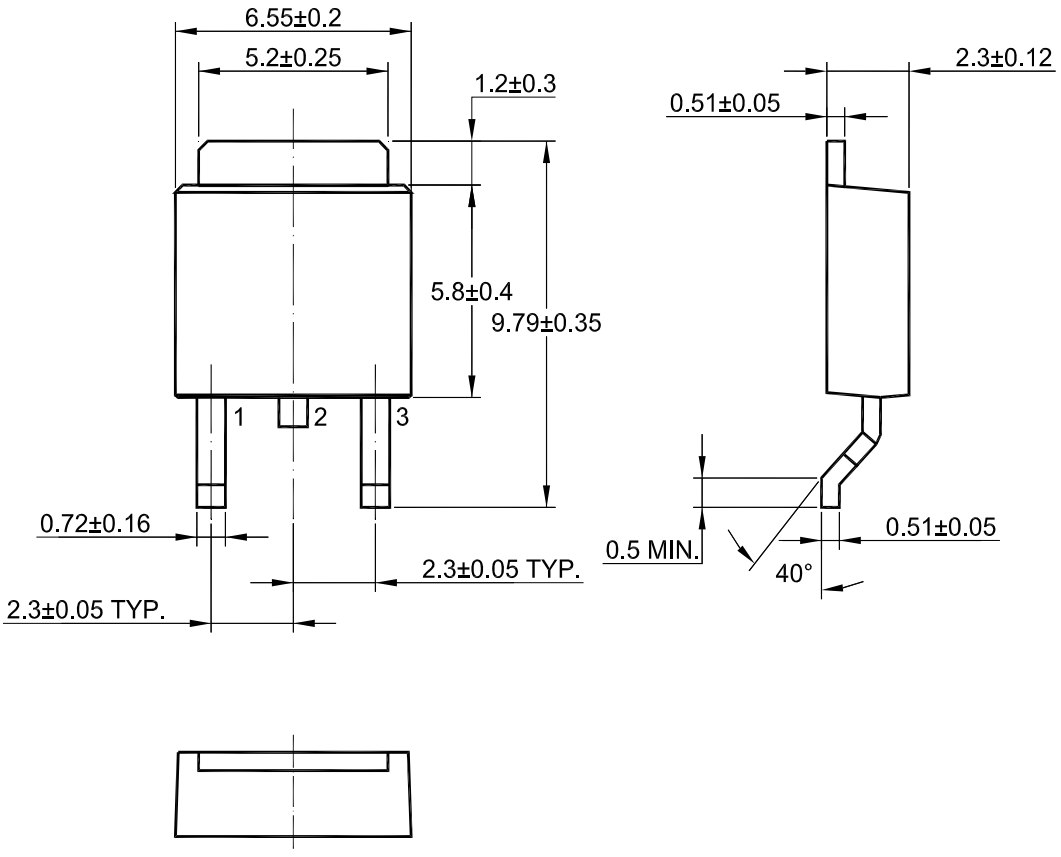


V_{SD} , Source to Drain Voltage (V)
Figure 3. Forward Characteristic of Reverse Diode



V_{GS} , Gate to Source Voltage (V)
Figure 4.On Resistance v.s. Gate Voltage

TO-252 PACKAGE OUTLINE



Dimensions in mm