SFTN8046R

N-Channel Enhancement Mode MOSFET





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

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	40	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current $T_c = 25^{\circ}C$ $T_c = 100^{\circ}C$	Ι _D	80 56	А
Peak Drain Current, Pulsed ¹⁾	I _{DM}	320	А
Avalanche Current ²⁾	I _{AS}	40	А
Single-Pulse Avalanche Energy at starting T_j = 25 °C, I_D = 40 A, V_{DD} = 25 V	E _{AS}	149	mJ
Power Dissipation T _c = 25°C	P _D	70	W
MaximumThermal Resistance from Junction to Case	$R_{ extsf{ heta}JC}$	2.14	°C/W
MaximumThermal Resistance from Junction to Ambient ³⁾	$R_{ extsf{ heta}JA}$	50	°C/W
Operating Junction and Storage Temperature Range	T_{j},T_{stg}	- 55 to + 175	°C

¹⁾ Pulse width limited by safe operating area.

 $^{2)}$ Pulse width limited by $T_{J\,max}.$ $^{3)}$ When mounted on FR-4 board of inch², 2 oz Cu.



Characteristics at $T_j = 25^{\circ}C$ unless otherwise specified

Parameter	Symbol	Min.	Тур.	Max.	Unit
Drain-Source Breakdown Voltage at I _D = 250 μA	BV _{DSS}	40	-	-	V
Gate-Source Threshold Voltage at V_{DS} = V_{GS} , I_D = 250 μ A	$V_{GS(th)}$	2	-	4	V
Drain-Source Leakage Current at V _{DS} = 40 V	I _{DSS}	-	-	1	μA
Gate Leakage Current at V_{GS} = ± 20 V	I _{GSS}	-	-	± 100	nA
Drain-Source On-State Resistance at V_{GS} = 10 V, I_D = 40 A	R _{DS(on)}	-	-	6	mΩ
Input Capacitance at V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz	C _{iss}	-	2150	-	pF
Output Capacitance at V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz	C _{oss}	-	335	-	pF
Reverse Transfer Capacitance at V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz	C _{rss}	-	160	-	pF
Gate charge total at V_{DS} = 20 V, V_{GS} = 10 V, I_D = 80 A	Qg	-	36	-	nC
Gate to Source Gate Charge at V_{DS} = 20 V, V_{GS} = 10 V, I_D = 80 A	Q _{gs}	-	11	-	nC
Gate to Drain Charge at V_{DS} = 20 V, V_{GS} = 10 V, I_D = 80 A	Q_gd	-	9	-	nC
Turn-On Delay Time at V _{DS} = 20 V, V _{GS} = 10 V, I _D = 40 A, R _G = 4.7 Ω	t _{d(on)}	-	10.5	-	ns
Turn-On Rise Time at V _{DS} = 20 V, V _{GS} = 10 V, I _D = 40 A, R _G = 4.7 Ω	tr	-	7.6	-	ns
Turn-Off Delay Time at V _{DS} = 20 V, V _{GS} = 10 V, I _D = 40 A, R _G = 4.7 Ω	t _{d(off)}	-	46.1	-	ns
Turn-Off Fall Time at V _{DS} = 20 V, V _{GS} = 10 V, I _D = 40 A, R _G = 4.7 Ω	t _f	-	11.9	-	ns
Drain-Source Diode Forward Voltage at V_{GS} = 0 V, I_S = 40 A	V _{SD}	-	-	1.3	V







Package Outline (Dimensions in mm)



Recommended Soldering Footprint





TO-252