

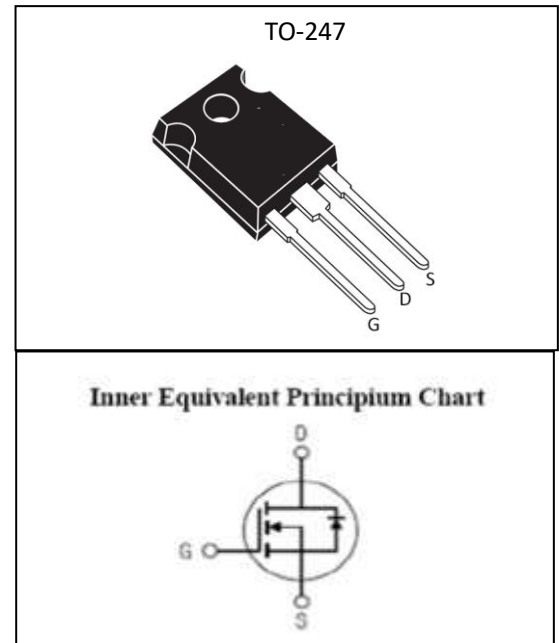
Features:

- Fast Switching
- Low ON Resistance($R_{ds(on)} \leq 85m\Omega$)
- Low Gate Charge (Typical Data:38nC)
- Low Reverse transfer capacitances
- 100% Single Pulse avalanche energy Test

Applications:

- Power switch circuit of adaptor and charger

V_{DSS}	200	V
I_D	30	A
$P_D(T_C=25^\circ C)$	170	W
$R_{DS(ON).TYP.}$	70	m Ω



Absolute (T_c=25°C unless otherwise specified):

Symbol	Parameter	Rating	Units
V_{DSS}	Drain-to-Source Voltage	200	V
I_D	Continuous Drain Current	30	A
	Continuous Drain Current T _C =100 °C	19	A
I_{DM}^{a1}	Pulsed Drain Current	120	A
V_{GS}	Gate-to-Source Voltage	±30	V
E_{AS}^{a2}	Single Pulse Avalanche Energy	1200	mJ
E_{AR}^{a1}	Avalanche Energy ,Repetitive	100	mJ
I_{AR}^{a1}	Avalanche Current	15	A
dv/dt^{a3}	Peak Diode Recovery dv/dt	5.0	V/ns
P_D	Power Dissipation	170	W
	Derating Factor above 25°C	1.36	W/°C
T_J, T_{stg}	Operating Junction and Storage Temperature Range	150, -55 to 150	°C
T_L	Maximum Temperature for Soldering	300	°C

Caution Stresses greater than those in the "Absolute Maximum Ratings" may cause permanent damage to the device

Thermal Characteristics

Symbol	Parameter	Rating	Units
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	0.735	$^{\circ}\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	62.5	$^{\circ}\text{C}/\text{W}$

Electrical Characteristics ($T_c = 25^{\circ}\text{C}$ unless otherwise specified) :

OFF Characteristics

Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
V_{DSS}	Drain to Source Breakdown Voltage	$V_{GS}=0\text{V}, I_D=250\mu\text{A}$	200	--	--	V
$\Delta BV_{DSS}/\Delta T_J$	Bvdss Temperature Coefficient	$I_D=250\mu\text{A}$, Reference 25°C	--	0.25	--	$\text{V}/^{\circ}\text{C}$
I_{DSS}	Drain to Source Leakage Current	$V_{DS}=200\text{V}, V_{GS}=0\text{V}, T_a=25^{\circ}\text{C}$	--	--	1.0	μA
		$V_{DS}=160\text{V}, V_{GS}=0\text{V}, T_a=125^{\circ}\text{C}$	--	--	10	
$I_{GSS(F)}$	Gate to Source Forward Leakage	$V_{GS}=+30\text{V}$	--	--	100	nA
$I_{GSS(R)}$	Gate to Source Reverse Leakage	$V_{GS}=-30\text{V}$	--	--	-100	nA

ON Characteristics

Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
$R_{DS(ON)}$	Drain-to-Source On-Resistance	$V_{GS}=10\text{V}, I_D=15\text{A}$	--	70	85	$\text{m}\Omega$
$V_{GS(TH)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	2.0	--	4.0	V
g_{fs}	Forward Trans conductance	$V_{DS}=15\text{V}, I_D=20\text{A}$	--	20	--	S
Pulse width $< 380\mu\text{s}$; duty cycle $< 2\%$.						

Dynamic Characteristics

Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
C_{iss}	Input Capacitance	$V_{GS}=0\text{V}, V_{DS}=25\text{V}$ $f=1.0\text{MHz}$	--	1600	--	pF
C_{oss}	Output Capacitance		--	300	--	
C_{rss}	Reverse Transfer Capacitance		--	35	--	

Resistive Switching Characteristics

Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
$t_{d(ON)}$	Turn-on Delay Time	$I_D=30\text{A}, V_{DD}=100\text{V}$ $V_{GS}=10\text{V}, R_g=2.4\Omega$	--	13	--	ns
t_r	Rise Time		--	28	--	
$t_{d(OFF)}$	Turn-Off Delay Time		--	35	--	
t_f	Fall Time		--	8	--	
Q_g	Total Gate Charge	$I_D=30\text{A}, V_{DD}=100\text{V}$ $V_{GS}=10\text{V}$	--	38	--	nC
Q_{gs}	Gate to Source Charge		--	12	--	
Q_{gd}	Gate to Drain ("Miller") Charge		--	13	--	

Source-Drain Diode Characteristics						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
I_{SD}	Continuous Source Current (Body Diode)		--	--	30	A
I_{SM}	Maximum Pulsed Current (Body Diode)		--	--	120	A
V_{SD}	Diode Forward Voltage	$I_S = 30A, V_{GS} = 0V$	--	--	1.5	V
t_{rr}	Reverse Recovery Time	$I_S = 30A, T_J = 25^\circ C$	--	250	--	ns
Q_{rr}	Reverse Recovery Charge	$dI_F/dt = 100A/\mu s, V_{GS} = 0V$	--	1100	--	nC

a1: Repetitive rating; pulse width limited by maximum junction temperature

a2: $L = 10mH, I_D = 15.8A$, Start $T_J = 25^\circ C$

a3: $I_{SD} = 30A, di/dt \leq 100A/\mu s, V_{DD} \leq BV_{DS}$, Start $T_J = 25^\circ C$