

N-Channel Power MOSFET (100V/50A)

Purpose

Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products

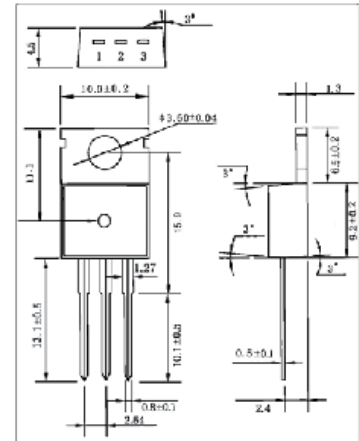
Feature

Low $R_{DS(on)}$, low gate charge, low C_{rSS} , fast switching.

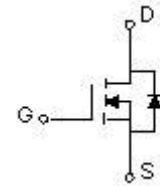
Absolute maximum ratings ($T_a=25^\circ\text{C}$)

Symbol	Rating	Unit
V_{DS}	100	V
$I_D (T_c=25^\circ\text{C})$	50	A
$I_D (T_c=100^\circ\text{C})$	35	A
I_{DM}	200	A
V_{GS}	± 20	V
E_{AS}	300	mJ
V_{DGR}	100	V
$P_{tot} (T_c=25^\circ\text{C})$	150	W
T_j	150	$^\circ\text{C}$
T_{stg}	-55~150	$^\circ\text{C}$

T0-220



1. Gate 2. Drain 3. Source



Electrical Characteristics ($T_a=25^\circ\text{C}$)

Symbol	Test Conditions			Min	Typ	Max	Unit	
V_{DSS}	$V_{GS}=0V$	$I_D=250\mu A$		100			V	
I_{DSS}	$V_{DS}=84V$	$V_{GS}=0V$				1.0	μA	
	$V_{DS}=84V$	$T_c=125^\circ\text{C}$				10		
I_{GSS}	$V_{GS}=\pm 20V$	$V_{DS}=0V$				± 0.1	μA	
$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\mu A$		2	2.8	4	V	
g_{fs}	$V_{DS}=25V$	$I_D=20A$			20		S	
$R_{DS(on)}$	$V_{GS}=10V$	$I_D=20A$			0.024	0.028	Ω	
V_{SD}	$V_{GS}=0V$	$I_{SD}=40A$				1.3	V	
C_{iss}	$V_{DS}=25V$	$V_{GS}=0V$	$f=1.0\text{MHz}$		1780		pF	
C_{oss}					265			
C_{rSS}					112			
$t_{d(on)}$	$V_{DD}=50V$	$I_D=20A$	$R_G=4.7\Omega$		28		ns	
t_r					63			
$t_{d(off)}$				$V_{GS}=10V$		84		
t_f						28		
Q_g	$V_{DD}=15V$	$I_D=40A$	$V_{GS}=10V$		60	80	nC	
Q_{GS}					10			
Q_{gd}					23			

Typical Electrical and Thermal Characteristics (Curves)

