

N-Channel Power MOSFET (55V/110A)

Purpose

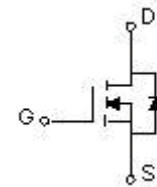
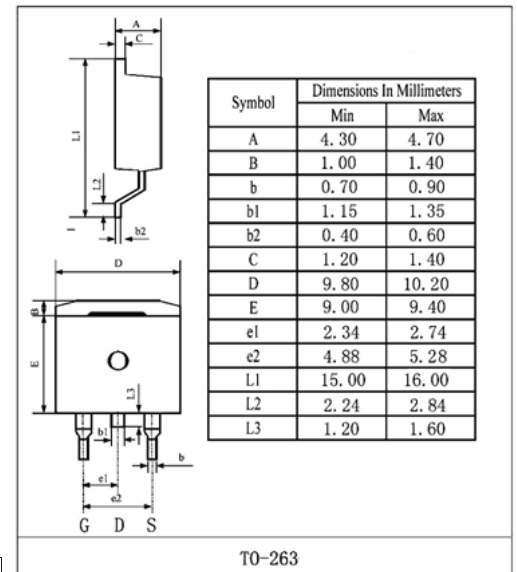
Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products

Feature

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

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	55	V
Drain Current	$I_D(T_c=25^\circ\text{C})$	110	A
Drain Current	$I_D(T_c=100^\circ\text{C})$	80	A
Pulsed Drain Current	I_{DM}	390	A
Gate-Source Voltage	V_{GSS}	± 20	V
Avalanche Current	I_{AR}	62	A
Single Pulsed Avalanche Energy	E_{AS}	1050	mJ
Repetitive Avalanche Energy	E_{AR}	20	mJ
Total Power Dissipation	$P_D(T_c=25^\circ\text{C})$	200	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$



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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	55			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=55V$ $V_{GS}=0V$			25	μA
		$V_{DS}=44V$ $V_{GS}=0V$ $T_C=150^\circ\text{C}$			250	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2		4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=62A$			8	m Ω
Forward Transconductance	g_{FS}	$V_{DS}=25V$ $I_D=62A$	44			S
Forward On Voltage	V_{SD}	$V_{GS}=0V$ $I_S=62A$			1.3	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1\text{MHz}$		3247		pF
Output Capacitance	C_{oss}			781		
Reverse Transfer Capacitance	C_{rss}			211		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=28V$ $I_D=62A$ $R_G=4.5\Omega$		14		ns
Turn-On Rise Time	t_r			101		
Turn-Off Delay Time	$t_{d(off)}$			50		
Turn-Off Fall Time	t_f			65		

Typical Electrical and Thermal Characteristics (Curves)

