

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

### Purpose

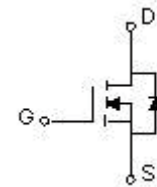
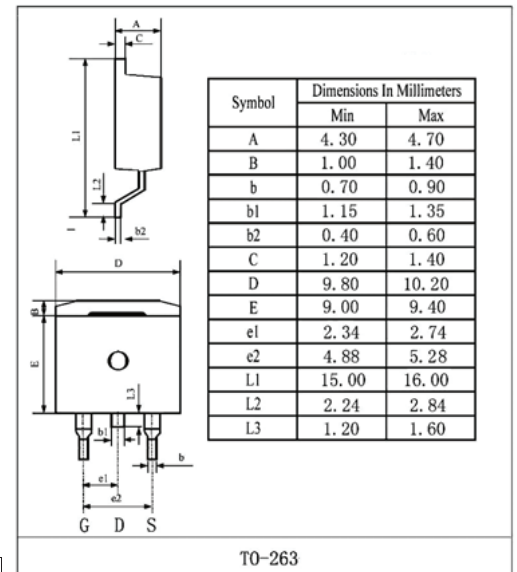
Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products

### 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	$V_{GSS}$	$\pm 20$	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	$\mu A$
		$V_{DS}=44V$ $V_{GS}=0V$ $T_C=150^\circ\text{C}$			250	$\mu A$
Gate-Body Leakage Current Forward	$I_{GSS}$	$V_{GS}=\pm 20V$ $V_{DS}=0V$			$\pm 0.1$	$\mu A$
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 $\Omega$
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)

