

Power MOSFET, 190 A



SOT-227

FEATURES

- Fully isolated package
- Very low on-resistance
- Fully avalanche rated
- Dynamic dV/dt rating
- Low drain to case capacitance
- Low internal inductance
- Optimized for SMPS applications
- Easy to use and parallel
- Industry standard outline
- Compliant to RoHS Directive 2002/95/EC
- Designed and qualified for industrial level


RoHS
COMPLIANT

PRODUCT SUMMARY

V_{DSS}	100 V
I_D DC	190 A
$R_{DS(on)}$	0.0065 Ω
Type	Modules - MOSFET
Package	SOT-227

DESCRIPTION

High current density power MOSFETs are paralleled into a compact, high power module providing the best combination of switching, ruggedized design, very low on-resistance and cost effectiveness.

The isolated SOT-227 package is preferred for all commercial-industrial applications at power dissipation levels to approximately higher than 500 W. The low thermal resistance and easy connection to the SOT-227 package contribute to its universal acceptance throughout the industry.

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	TEST CONDITIONS	MAX.	UNITS
Continuous drain current at V_{GS} 10 V	I_D	$T_C = 40\text{ }^\circ\text{C}$	190	A
		$T_C = 100\text{ }^\circ\text{C}$	130	
Pulsed drain current	I_{DM}		720	
Power dissipation	P_D	$T_C = 25\text{ }^\circ\text{C}$	568	W
Linear derating factor			2.7	W/ $^\circ\text{C}$
Gate to source voltage	V_{GS}		± 20	V
Single pulse avalanche energy	E_{AS} ⁽²⁾		700	mJ
Avalanche current	I_{AR} ⁽¹⁾		180	A
Repetitive avalanche energy	E_{AR} ⁽¹⁾		48	mJ
Peak diode recovery dV/dt	dV/dt ⁽³⁾		5.7	V/ns
Operating junction and storage temperature range	T_J, T_{Stg}		- 55 to + 150	$^\circ\text{C}$
Insulation withstand voltage (AC-RMS)	V_{ISO}		2.5	kV
Mounting torque		M4 screw	1.3	Nm

Notes

⁽¹⁾ Repetitive rating; pulse width limited by maximum junction temperature.

⁽²⁾ Starting $T_J = 25\text{ }^\circ\text{C}$, $L = 43\text{ }\mu\text{H}$, $R_g = 25\text{ }\Omega$, $I_{AS} = 180\text{ A}$.

⁽³⁾ $I_{SD} \leq 180\text{ A}$, $dI/dt \leq 83\text{ A}/\mu\text{s}$, $V_{DD} \leq V_{(BR)DSS}$, $T_J \leq 150\text{ }^\circ\text{C}$.



THERMAL RESISTANCE

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS
Junction to case	R_{thJC}	-	-	0.22	°C/W
Case to heatsink, flat, greased surface	R_{thCS}	-	0.05	-	

ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Drain to source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 250\text{ }\mu\text{A}$	100	-	-	V
Breakdown voltage temperature coefficient						



Fig. 1 - Typical Output Characteristics

Fig. 4 - Normalized On-Resistance vs. Temperature

Fig. 2 - Typical Output Characteristics

Fig. 5 - Typical Capacitance vs.
Drain to Source Voltage

Fig. 3 - Typical Transfer Characteristics

Fig. 6 - Typical Gate Charge vs.
Gate to Source Voltage











Outline Dimensions



