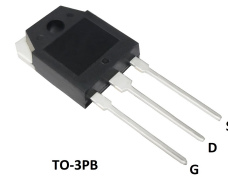


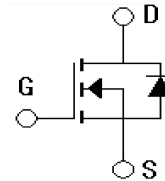
Features

- $V_{DS}=60V, I_D=60A$
- Improved dv/dt capability
- Fast switching
- 100% avalanche tested



Applications

- Power factor correction (PFC)
- Switched mode power supplies (SMPS)
- Uninterruptible Power Supply (UPS)



Absolute Ratings ($T_c=25^\circ C$)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current-continuous	I_D TC=25°C	60	A
	TC=100°C	40	
Drain Current-pulse ⁽¹⁾	I_{DM}	240	A
Single Pulsed Avalanche Energy ($T_j=25^\circ C, I_D=I_{AR}, V_{DD}=50V$)	E_{AS}	653	mJ
Maximum Power Dissipation	PD TC=25°C Derate above 25°C	180	W
		0.864	W/°C
Operating and Storage Temperature Range	T_J, T_{STG}	-55~+150	°C

1. Pulse width Limited by safe operating area

Electrical Characteristics($T_{CASE}=25^\circ C$ unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Drain-Source Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=V_{DSS}, V_{GS}=0V, T_c=25^\circ C$	-	-	1	μA
		$T_c=125^\circ C$	-	-	50	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA

On-Characteristics

Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2	2.8	3.6	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=50A$	-	5	6	m Ω
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	-	2700	-	pF
Output capacitance	C_{oss}		-	1016	-	pF
Reverse transfer capacitance	C_{rss}		-	487	-	pF

Electrical Characteristics($T_{CASE}=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Switching-Characteristics						
Turn-On delay time	t _{d(on)}	V _{DS} =28V,I _D =42A, V _{GS} =15V,R _G =25Ω	-	52	-	ns
Turn-On rise time	t _r		-	142	-	ns
Turn-Off delay time	t _{d(Off)}		-	355	-	ns
Turn-Off rise time	t _f		-	230	-	ns
Total Gate Charge	Q _g	V _{DS} =28V,I _D =42A, V _{GS} =15V,R _G =25Ω	-	115	-	nC
Gate-Source charge	Q _{gs}		-	13	-	nC
Gate-Drain charge	Q _{gd}		-	55	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain-Source Diode Forward Current	V _{SD}	V _{GS} =0V,I _S =40A	-	-	1.2	V
Diode Forward Current	I _S		-	-	60	A
Reverse recovery time	T _{rr}	I _S =180A, dI/dT=100A/μS V _{GS} =0V,	-	100	-	nS
Reverse recovery charge	Q _{rr}		-	0.33	-	μC

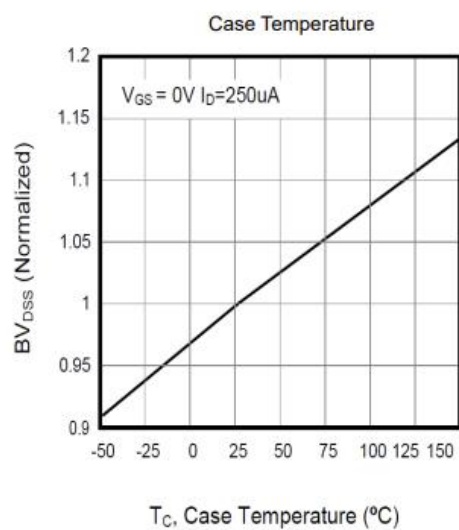
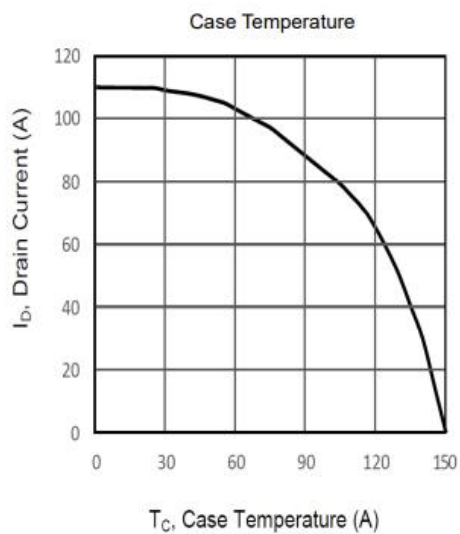
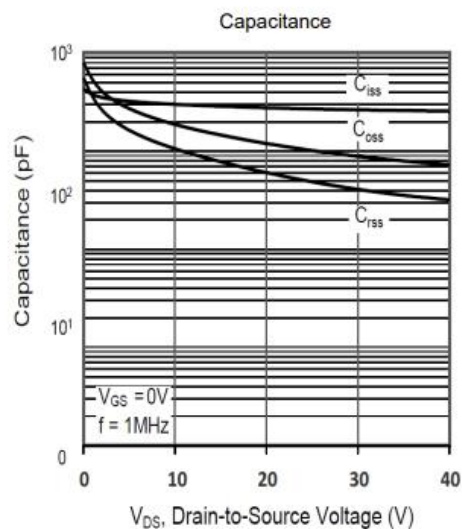
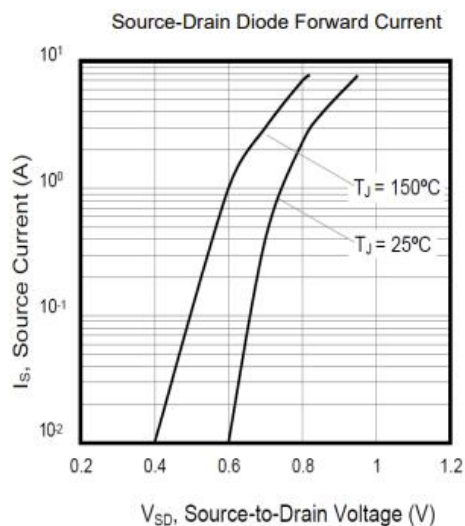
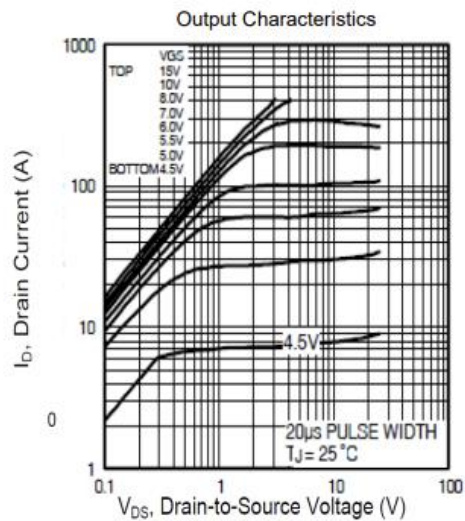
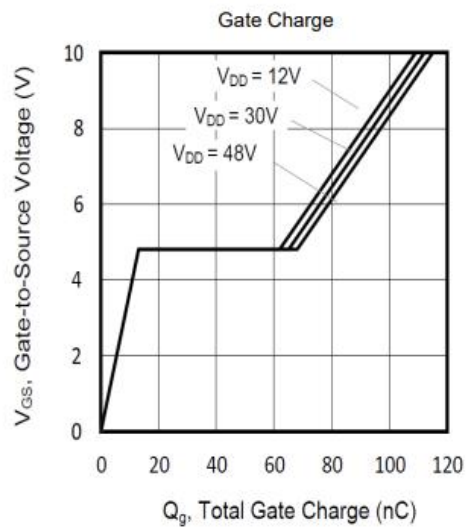
Thermal Characteristic

Parameter	Symbol	Value	Unit
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.65	$^{\circ}C/W$
Thermal Resistance, junction to Ambient	$R_{th(j-A)}$	30	$^{\circ}C/W$

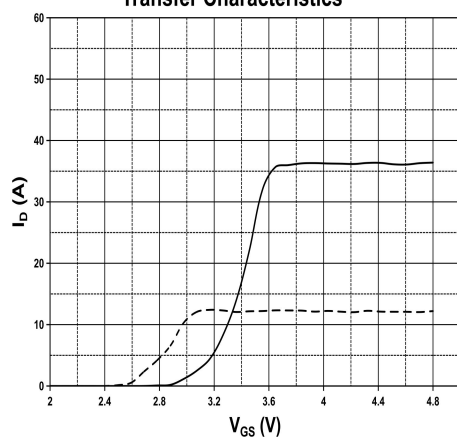
Notes:

1. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

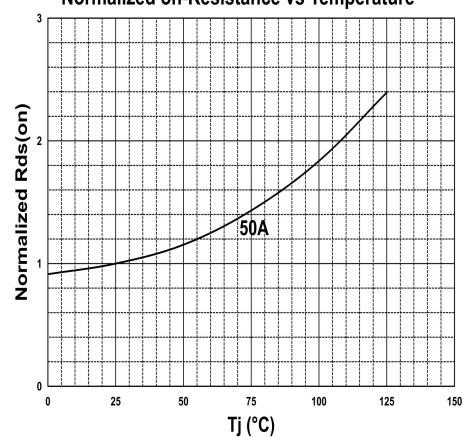
Electrical Characteristics



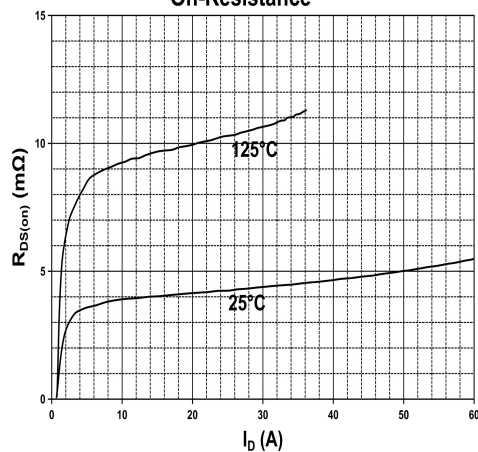
Transfer Characteristics



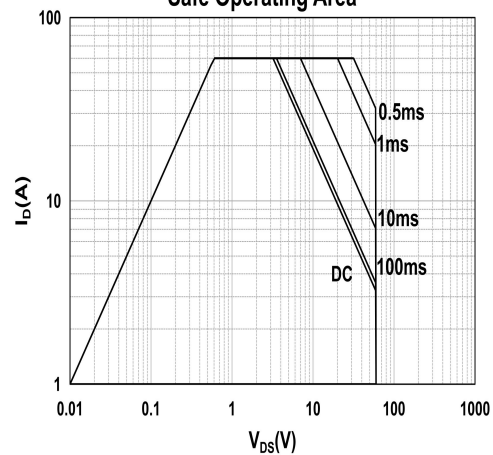
Normalized on-Resistance vs Temperature



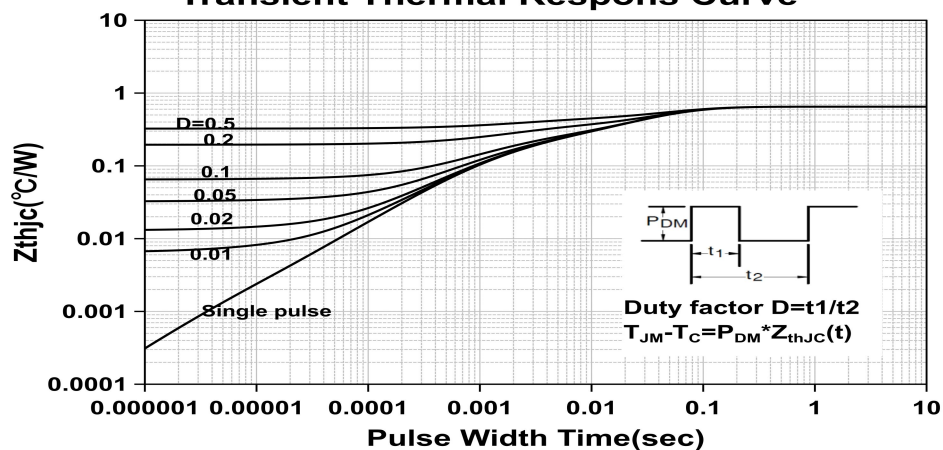
On-Resistance



Safe Operating Area

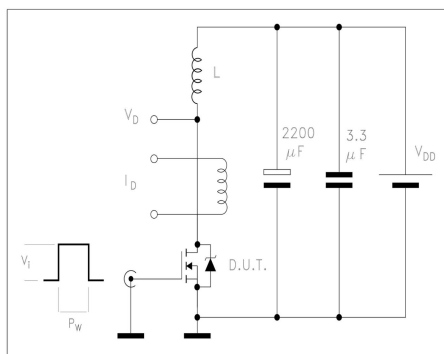


Transient Thermal Respons Curve

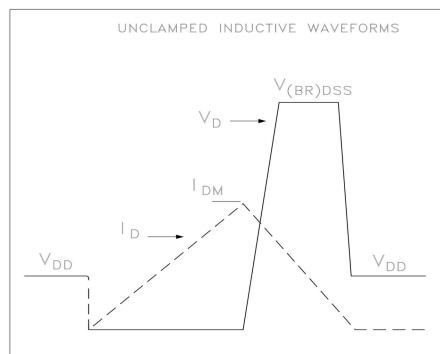


Package Mechanical DATA

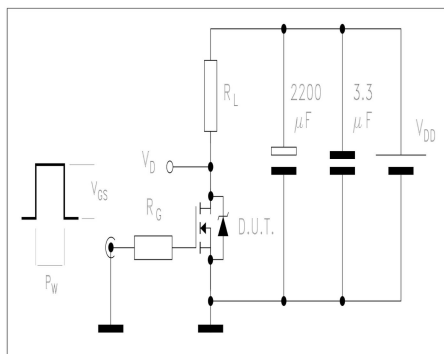
Unclamped Inductive Load Test Circuit



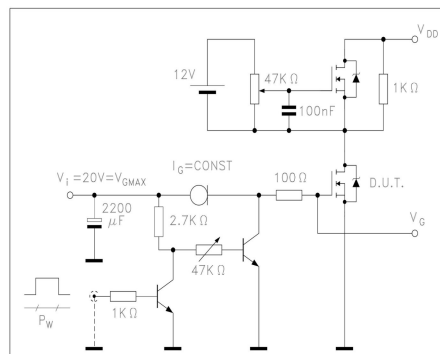
Unclamped Inductive Waveform



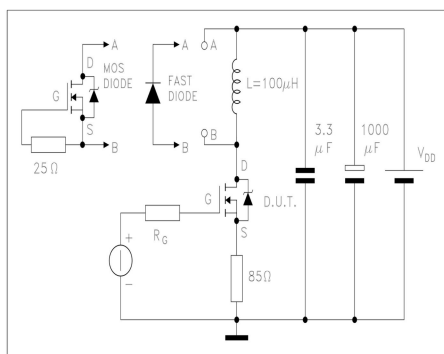
Switching Times Test Circuit For Resistive Load



Gate Charge test Circuit



Test Circuit For Inductive Load Switching And Diode Recovery Times



Package Mechanical Data

