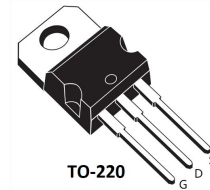


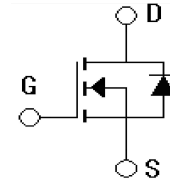
Features

- $V_{DS}=200V, I_D=60A$
- 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}		200	V
Transient Gate-Source Voltage	V _{GSM}		±30	V
Continuous Gate-Source Voltage	V _{GSS}		±20	V
Drain Current-continuous	I _D	T _C =25℃	60	A
		T _C =100℃	30	
Drain Current-pulse ^①	I _{DM}		120	A
Single Pulsed Avalanche Energy ^②	E _{AS}		879	mJ
Avalanche current	I _{AR}		26	A
Maximum Power Dissipation	PD TC=25℃ Derate above 25℃		250	W
			2.0	W/℃
Peak diode recovery dv/dt ^③	dv/dt		9.5	V/ns
Operating and Storage Temperature Range	T _J ,T _{STG}		-55~+150	℃

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

Parameter	Symbol	Tests conditions	Min.	Typ.	Max.	Units
Drain-Source Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	200	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=V_{DSS}, V_{GS}=0V$	$T_C=25^\circ C$	-	10	μA
			$T_C=125^\circ C$	-	500	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
On-Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.4	3.2	4.0	V

Static On-Resistance ^④	$R_{DS(ON)}$	$V_{GS}=10V, I_D=20A$	-	50	63	mΩ
Transconductance ^④	G_{fs}	$V_{DS}=10V, I_D=20A$	-	5		S
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	-	2700	-	pF
Output capacitance	C_{oss}		-	416	-	pF
Reverse transfer capacitance	C_{rss}		-	87	-	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} =100V,I _D =60A, V _{GS} =15V,R _G =25Ω ^④	-	22	-	ns
Turn-On rise time	t _r		-	102	-	ns
Turn-Off delay time	t _{d(Off)}		-	55	-	ns
Turn-Off rise time	t _f		-	50	-	ns
Total Gate Charge	Q _g	V _{DS} =100V,I _D =30A, V _{GS} =15V,R _G =25Ω ^④	-	70	-	nC
Gate-Source charge	Q _{gs}		-	19	-	nC
Gate-Drain charge	Q _{gd}		-	30	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain-Source Diode Forward Current	V _{SD}	V _{GS} =0V,I _S =20A	-	0.86	1.5	V
Pulsed Source Current ^①	I _S		-	-	60	A
Reverse recovery time	T _{rr}	I _S =30A, dI/dt=100A/μs V _{GS} =0V,	-	150	-	ns
Reverse recovery charge	Q _{rr}		-	1.2	-	μC

Thermal Characteristic

Parameter	Symbol	Value	Unit
Thermal Resistance, junction to Case, Max	$R_{th(j-C)}$	0.50	$^{\circ}C/W$
Thermal Resistance, junction to Ambient, Max	$R_{th(j-A)}$	30	$^{\circ}C/W$

Notes:

- ① Repetitive rating: pulse width limited by max. junction temperature
- ② Starting $T_J=25^{\circ}C$, $L=0.5mH, R_G=25\Omega, I_{AS}=26A$
- ③ $I_{SD}\leq 30A, di/dt\leq 390A/\mu s, V_{DD}\leq V_{(BR)DSS}, T_J=150^{\circ}C$
- ④ Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

Electrical Characteristics(curves)

Fig.1 On-Region Characteristic@25°C

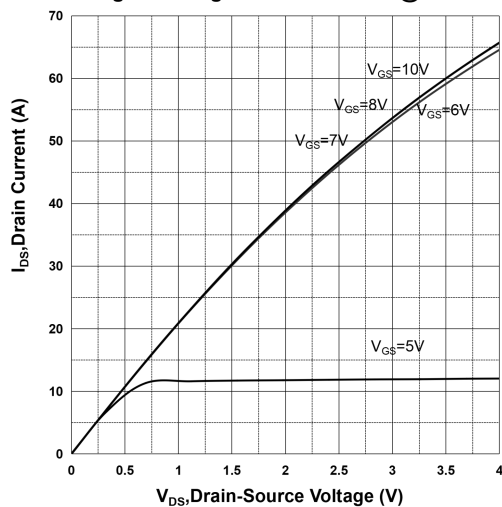


Fig.2 Extended On-Region Characteristic@25°C

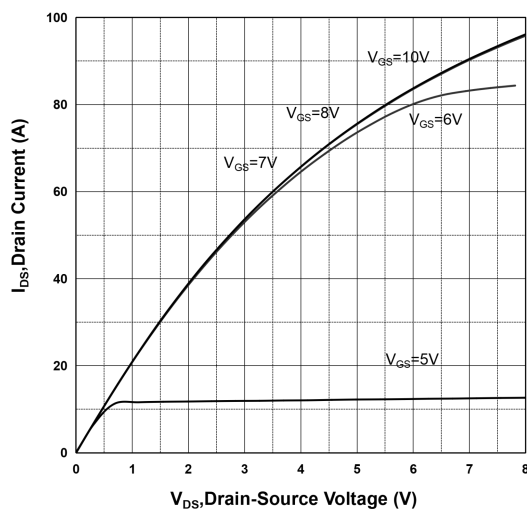


Fig.3 On-Region Characteristic@125°C

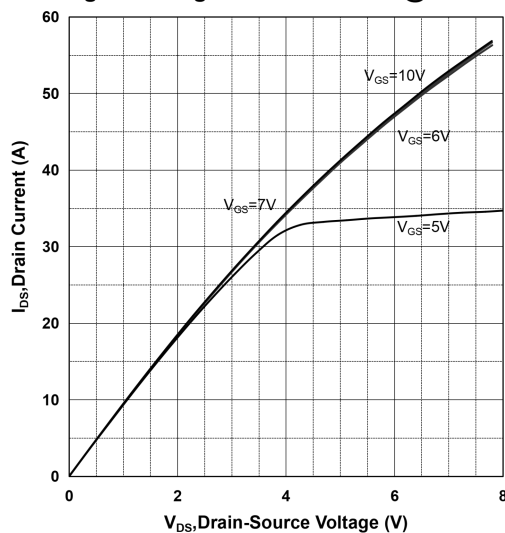


Fig.4 Transfer Characteristics

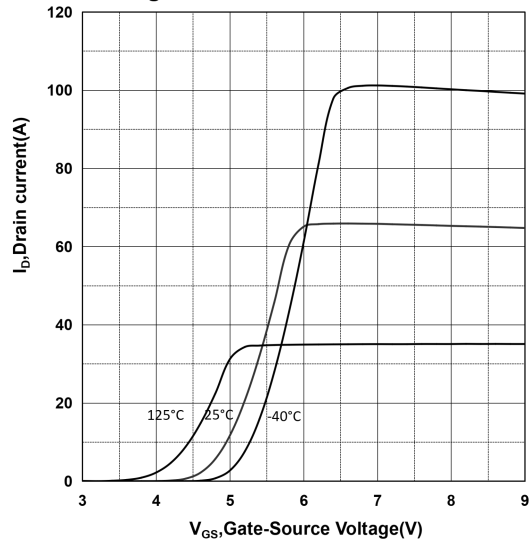


Fig.5 Transconductance

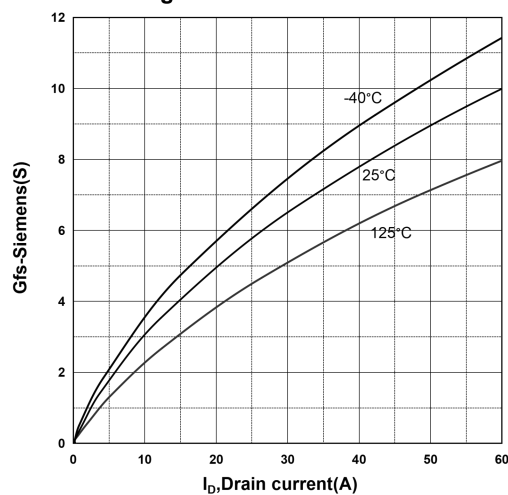


Fig.6 On-Resistance Variation vs Drain Current and Gate Voltage

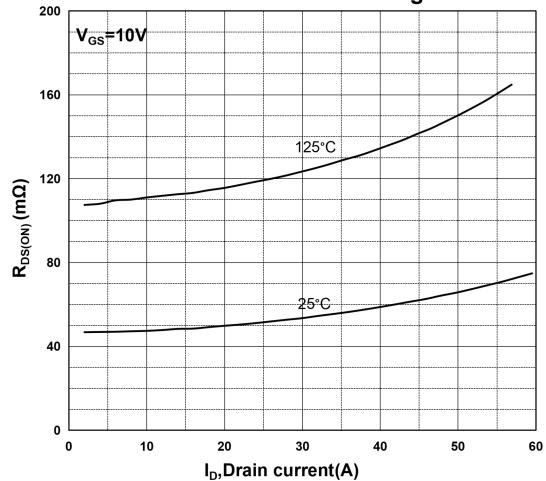


Fig.7 Normalization On-Resistance Variation vs Junction Temperature

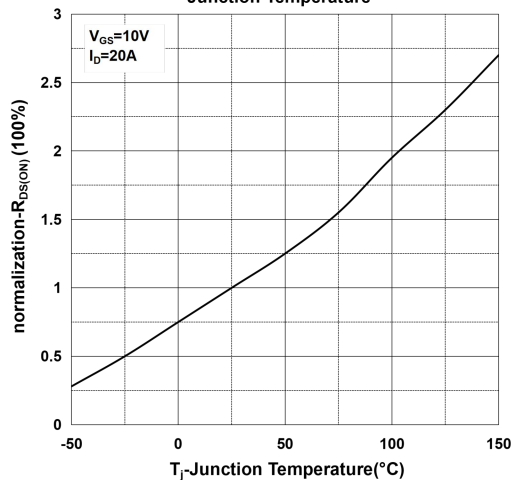


Fig.8 Body Diode Forward Voltage Variation with Source Current and Temperature

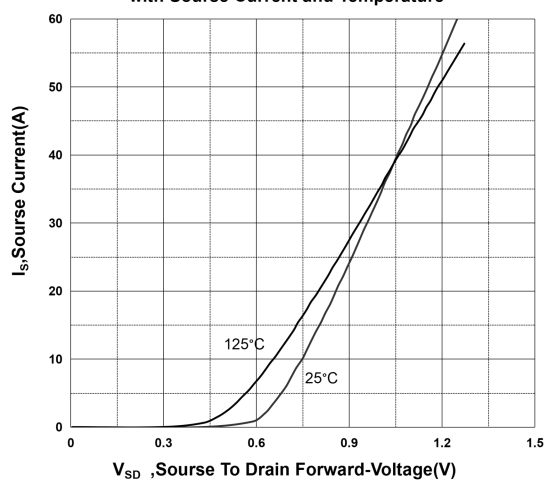


Fig.9 Capacitance

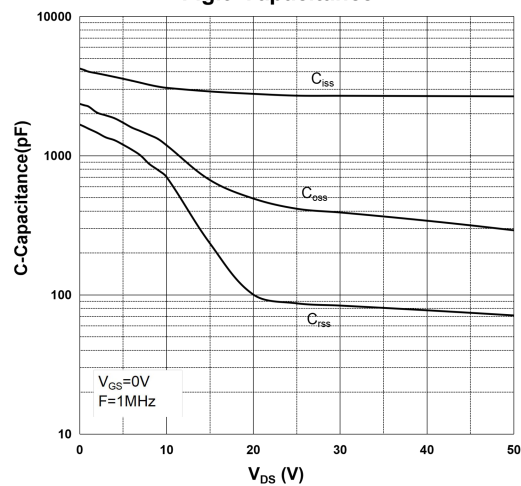


Fig.10 Gate Charge

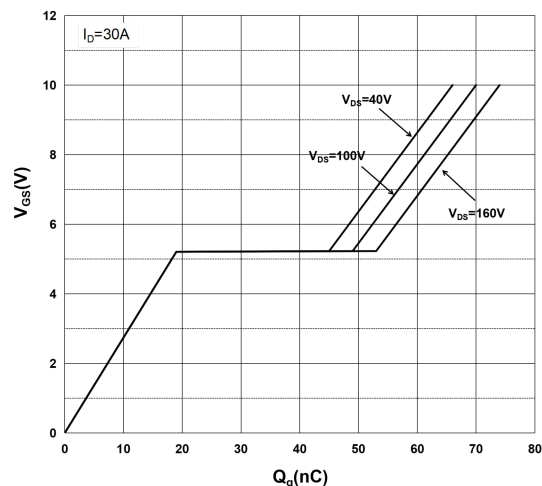


Fig.11 Maximum Drain Current vs Case Temperature

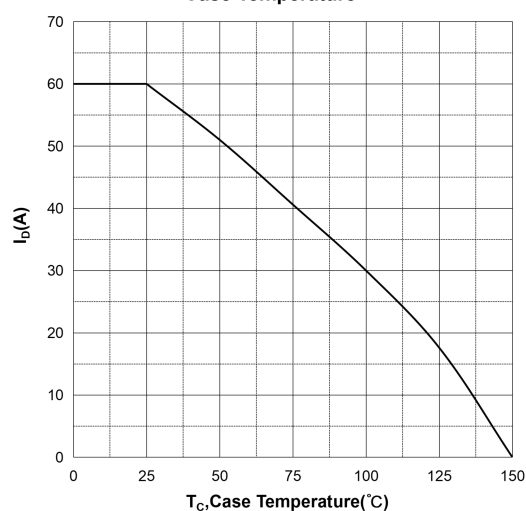


Fig.12 Normalized $V_{(BV)DS}$ vs temperature

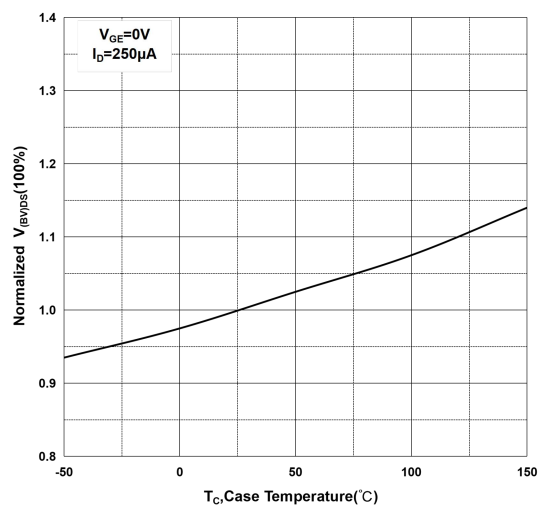


Fig.13 Safe Operating Area

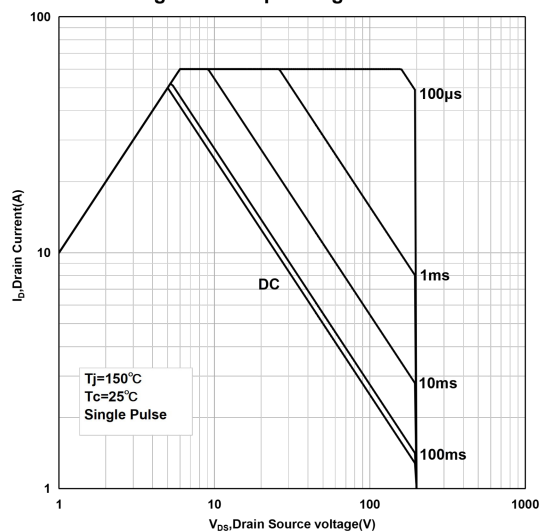
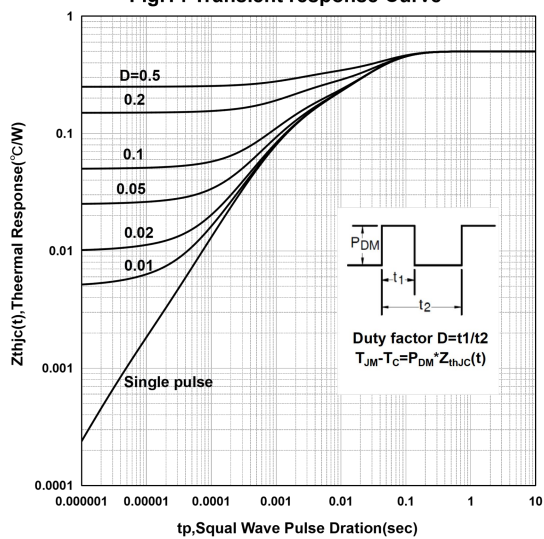


Fig.14 Transient response Curve



Package Mechanical Data

