

P168LG10GN

Power MOSFETs

100V, 168A, N-channel

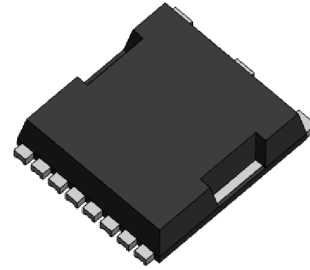
Feature

- N-channel
- SMD
- Super Large Current
- Low Ron
- 10V Gate Drive
- Low Capacitance
- Halogen free
- Pb free terminal
- RoHS:Yes

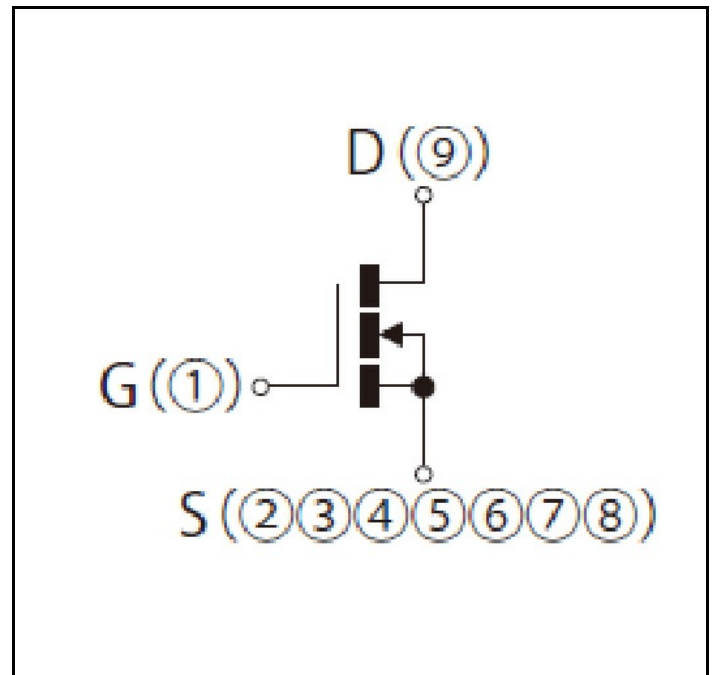
OUTLINE

Package (House Name): LG

Package (JEDEC Code): MO-299B



Equivalent circuit



Absolute Maximum Ratings

Item	Symbol	Conditions	Ratings	Unit
Storage temperature	T _{stg}		-55 to 175	°C
Channel temperature	T _{ch}		-55 to 175	°C
Drain-source voltage	V _{DSS}		100	V
Gate-source voltage	V _{GSS}		±20	V
Continuous drain current(DC)	I _D		168	A
Continuous drain current(Peak)	I _{DP}	Pulse width 10μs, Duty=1/100	672	A
Continuous source current(DC)	I _S		168	A
Total power dissipation	P _T	With heatsink	365	W
Total power dissipation	P _T	Measured on the 1 inch ² glass epoxy substrate pattern area : 634.86mm ²	3.7	W
Total power dissipation	P _T	Measured on the 1 inch ² glass epoxy substrate pattern area : 164.16mm ²	2.7	W
Single avalanche current	I _{AS}	Starting T _{ch} =25°C T _{ch} ≤150°C	74	A
Single avalanche energy	E _{AS}	Starting T _{ch} =25°C T _{ch} ≤150°C	273	mJ

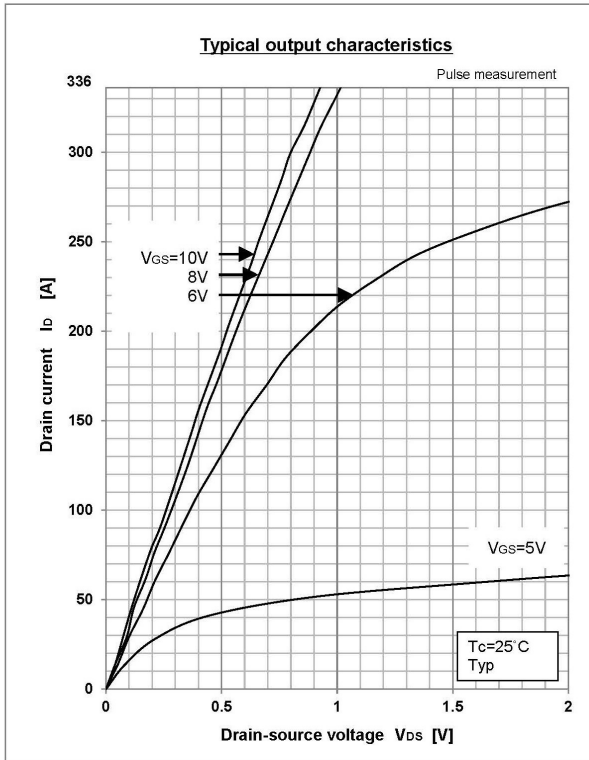
※ :See the original Specifications

Electrical Characteristics

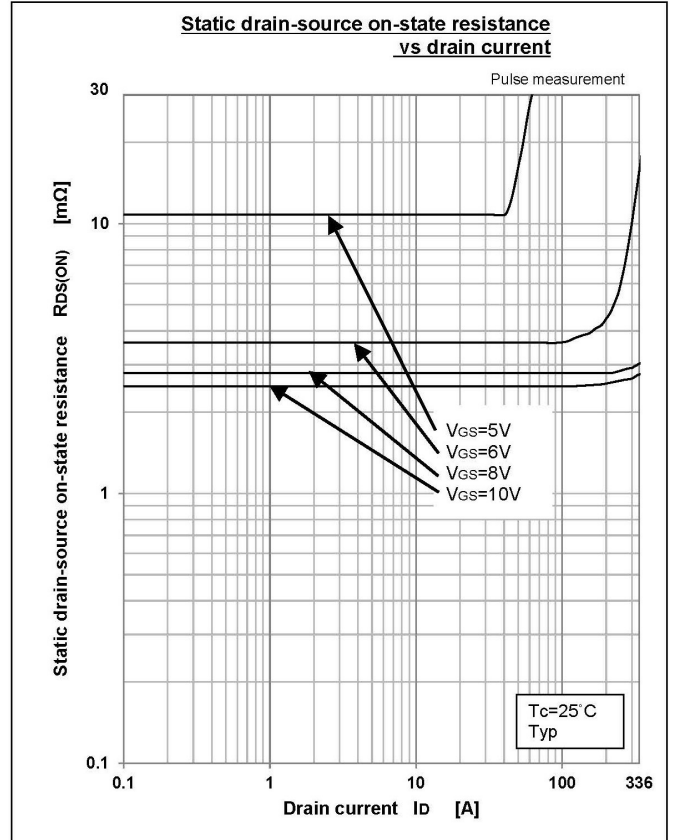
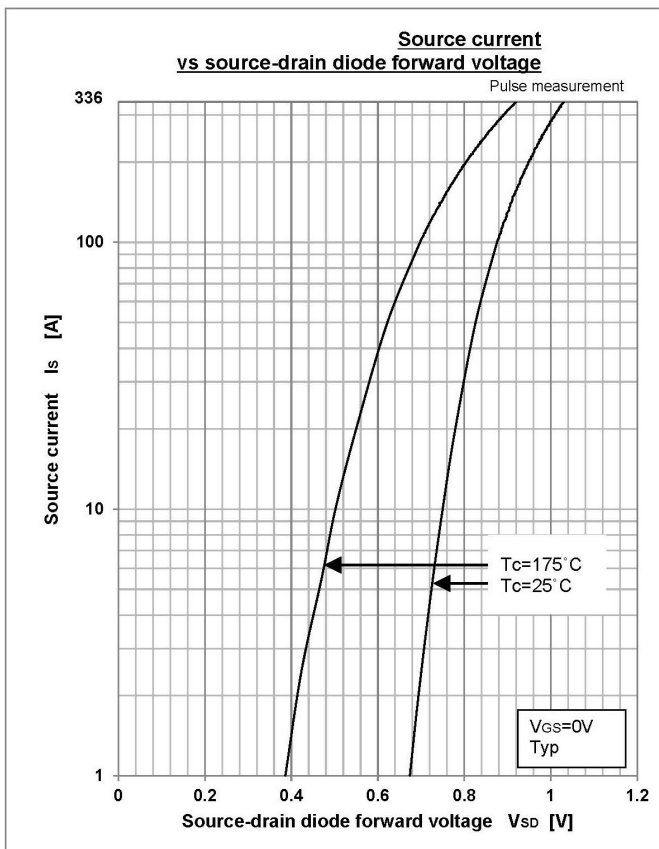
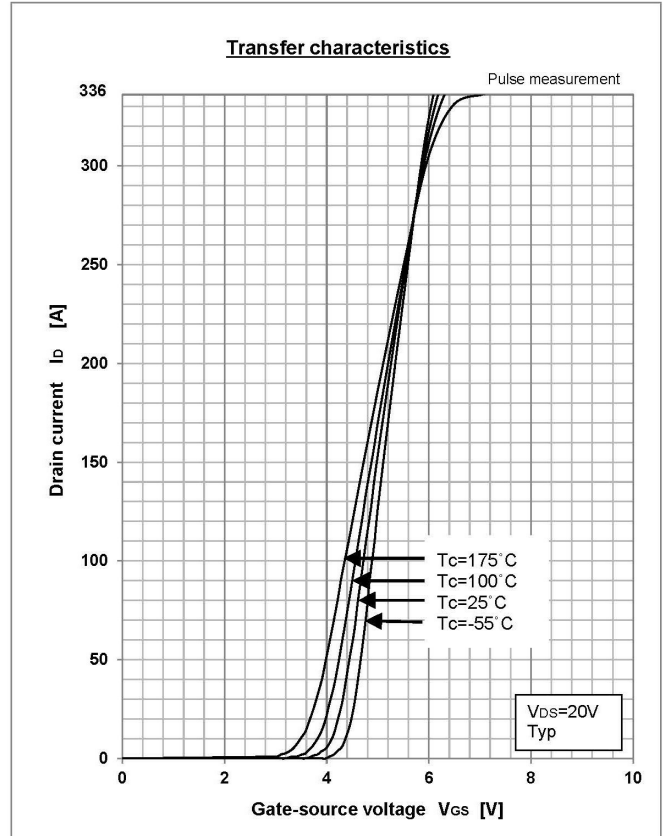
Item	Symbol	Conditions	Ratings			Unit
			MIN	TYP	MAX	
Drain-Source breakdown voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	100			V
Zero gate voltage drain current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$			1	μA
Gate-source leakage current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 0.1	μA
Forward transconductance	g_{fs}	$I_D=42A, V_{DS}=10V$	35			S
Static drain-source on-state resistance	$R_{DS(ON)}$	$I_D=84A, V_{GS}=10V$		0.0025	0.0031	Ω
Gate threshold voltage	V_{th}	$I_D=1mA, V_{DS}=10V$	2	3	4	V
Source-drain diode forward voltage	V_{SD}	$I_S=84A, V_{GS}=0V$			1.2	V
Thermal resistance	$R_{th(j-c)}$	Junction to case, With heatsink			0.41	$^{\circ}C/W$
Thermal resistance	$R_{th(j-a)}$	Junction to ambient, Measured on the 1 inch ² glass epoxy substrate pattern area : 634.36mm ²			40	$^{\circ}C/W$
Thermal resistance	$R_{th(j-a)}$	Junction to ambient, Measured on the 1 inch ² glass epoxy substrate pattern area : 164.16mm ²			55	$^{\circ}C/W$
Total gate charge	Q_g	$V_{DS}=80V, V_{GS}=10V, I_D=84A$		96		nC
Gate to source charge	Q_{gs}	$V_{DS}=80V, V_{GS}=10V, I_D=84A$		28		nC
Gate to drain charge	Q_{gd}	$V_{DS}=80V, V_{GS}=10V, I_D=84A$		36		nC
Input capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V, f=100kHz$		6035		pF
Reverse transfer capacitance	C_{rss}	$V_{DS}=50V, V_{GS}=0V, f=100kHz$		31		pF
Output capacitance	C_{oss}	$V_{DS}=50V, V_{GS}=0V, f=100kHz$		1100		pF
Turn-on delay time	$t_{d(on)}$	$I_D=42A, R_L=1.19\Omega, V_{DS}=50V, R_g=0\Omega, +V_{GS}=10V, -V_{GS}=0V$		16		ns
Rise time	t_r	$I_D=42A, R_L=1.19\Omega, V_{DS}=50V, R_g=0\Omega, +V_{GS}=10V, -V_{GS}=0V$		25		ns
Turn-off delay time	$t_{d(off)}$	$I_D=42A, R_L=1.19\Omega, V_{DS}=50V, R_g=0\Omega, +V_{GS}=10V, -V_{GS}=0V$		36		ns
Fall time	t_f	$I_D=42A, R_L=1.19\Omega, V_{DS}=50V, R_g=0\Omega, +V_{GS}=10V, -V_{GS}=0V$		10		ns
Diode reverse recovery time	t_{rr}	$I_S=84A, V_{GS}=0V, -di/dt=100A/\mu s$		90		ns
Diode reverse recovery charge	Q_{rr}	$I_S=84A, V_{GS}=0V, -di/dt=100A/\mu s$		209		nC

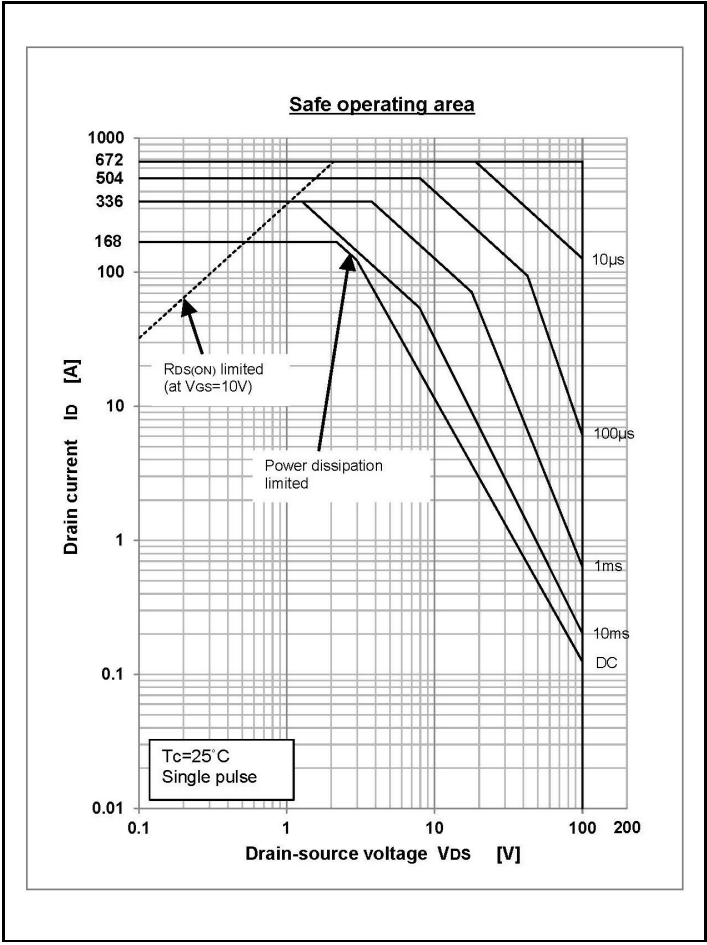
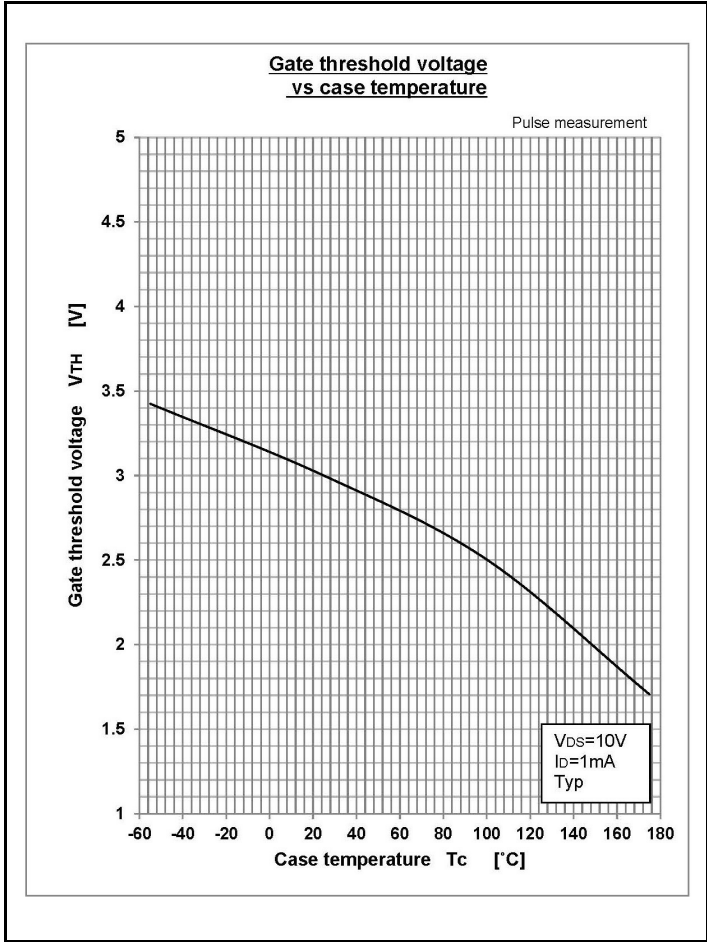
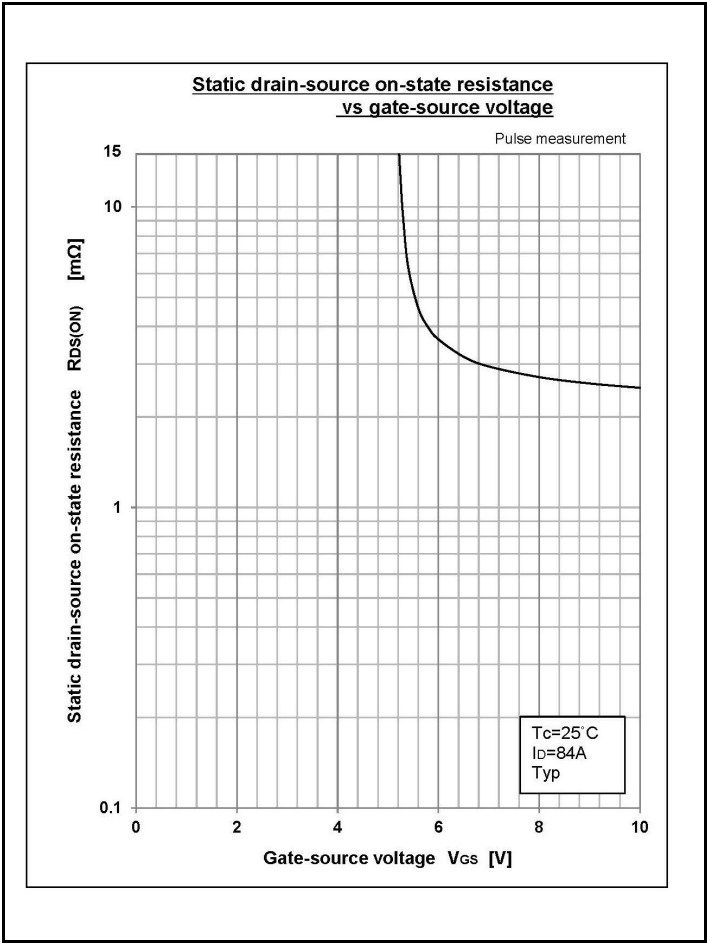
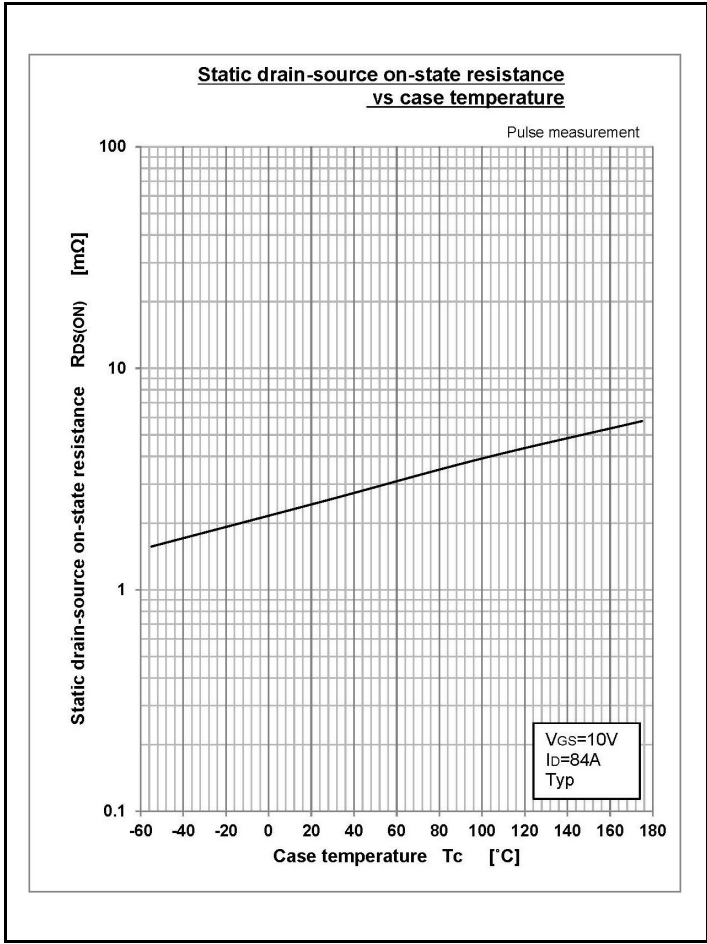
※ : See the original Specifications

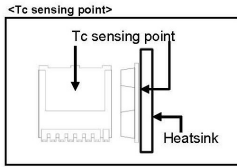
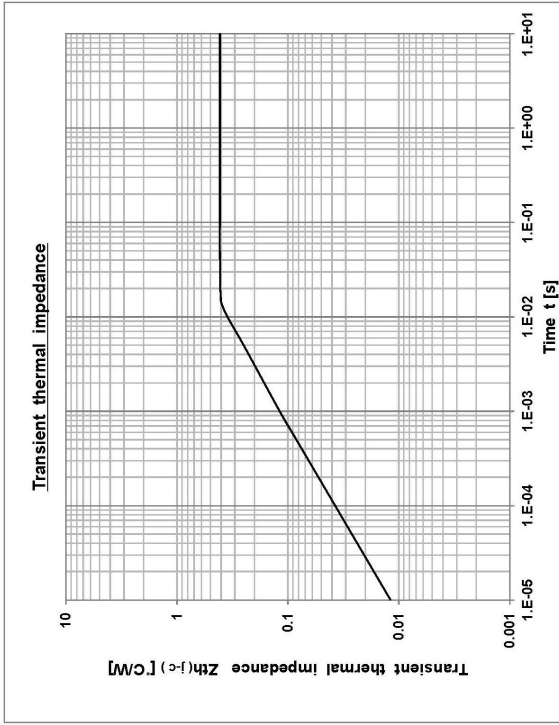
CHARACTERISTIC DIAGRAMS



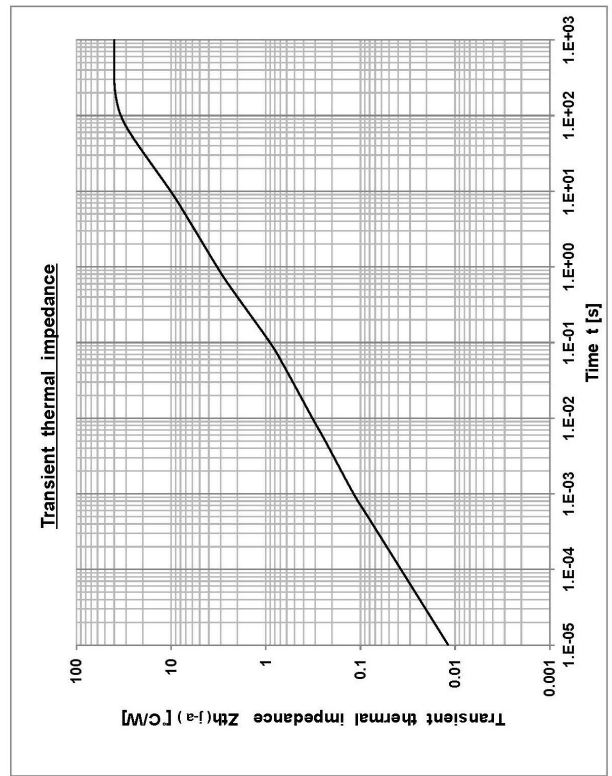
Note: The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.





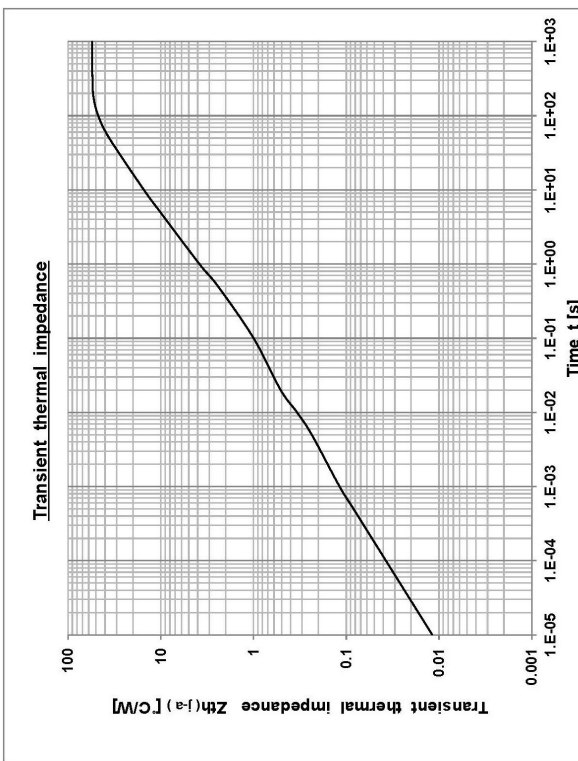


Specification No.



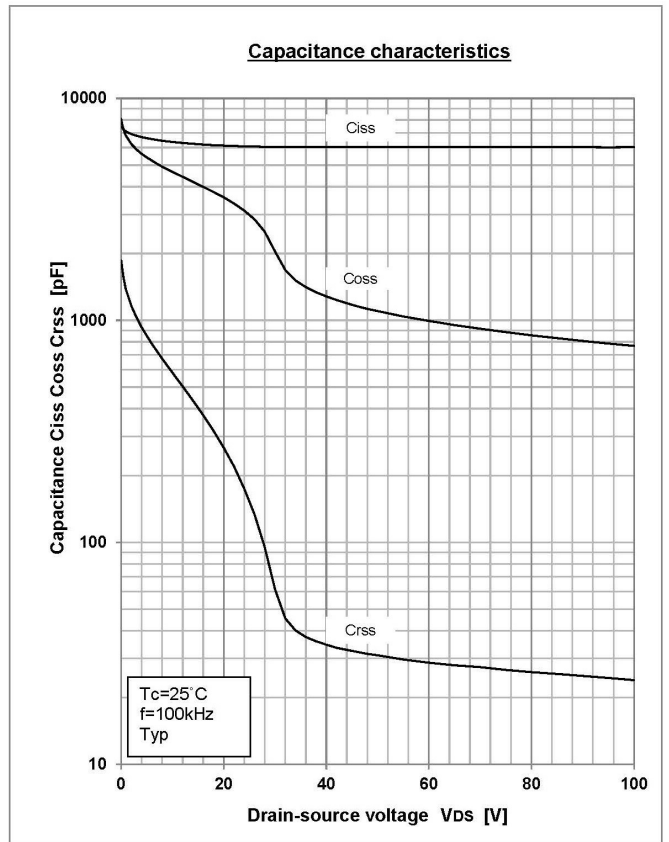
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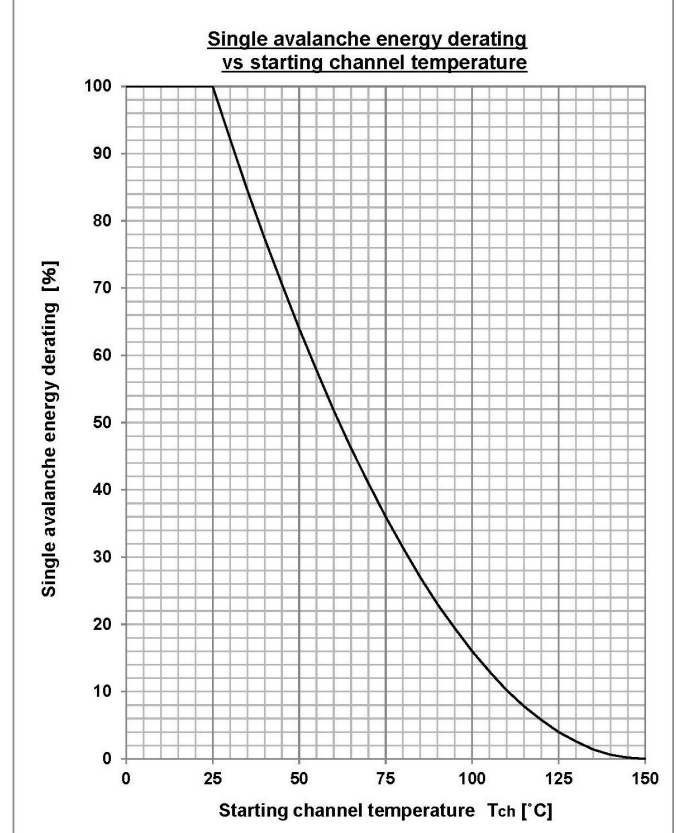
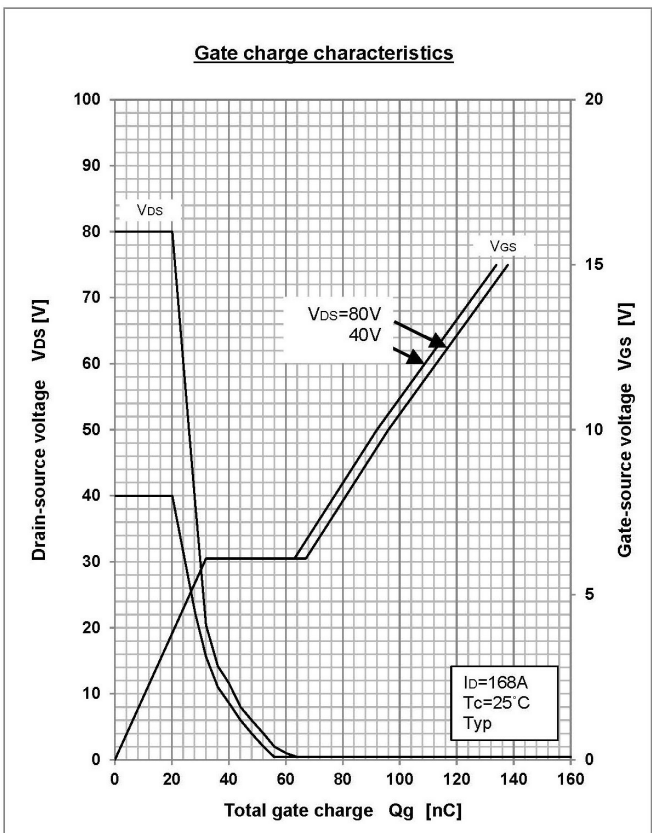
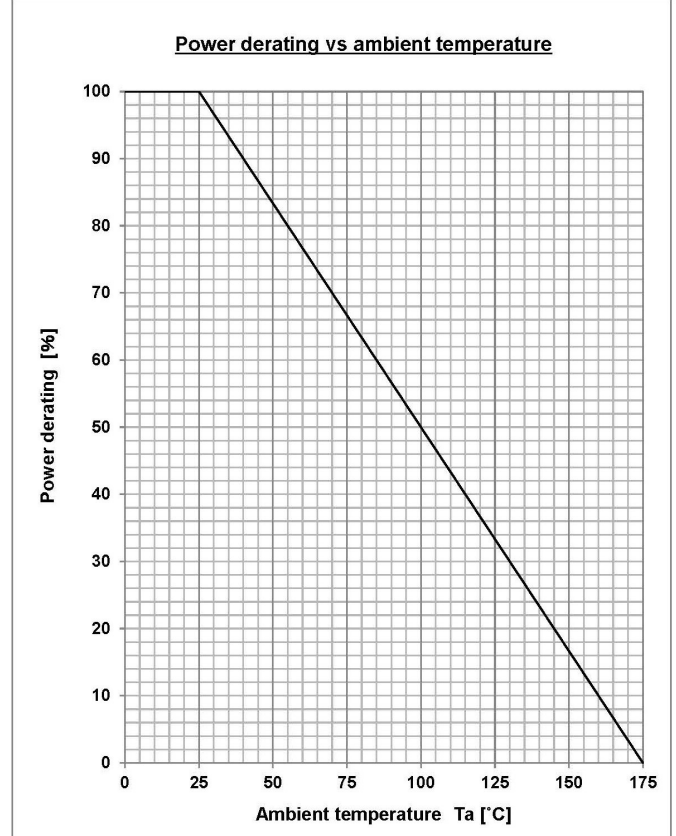
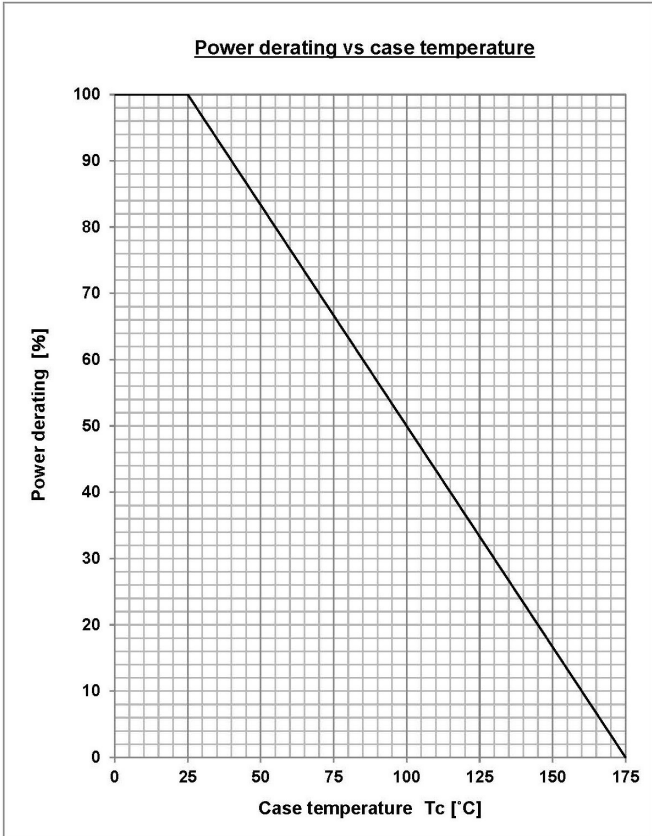
Type	Glass-epoxy
Size	1 inch ²
Thickness	1.6 mm
Conductor thickness	70 μm
Pattern area	634.86 mm ²



<Substrate detail>

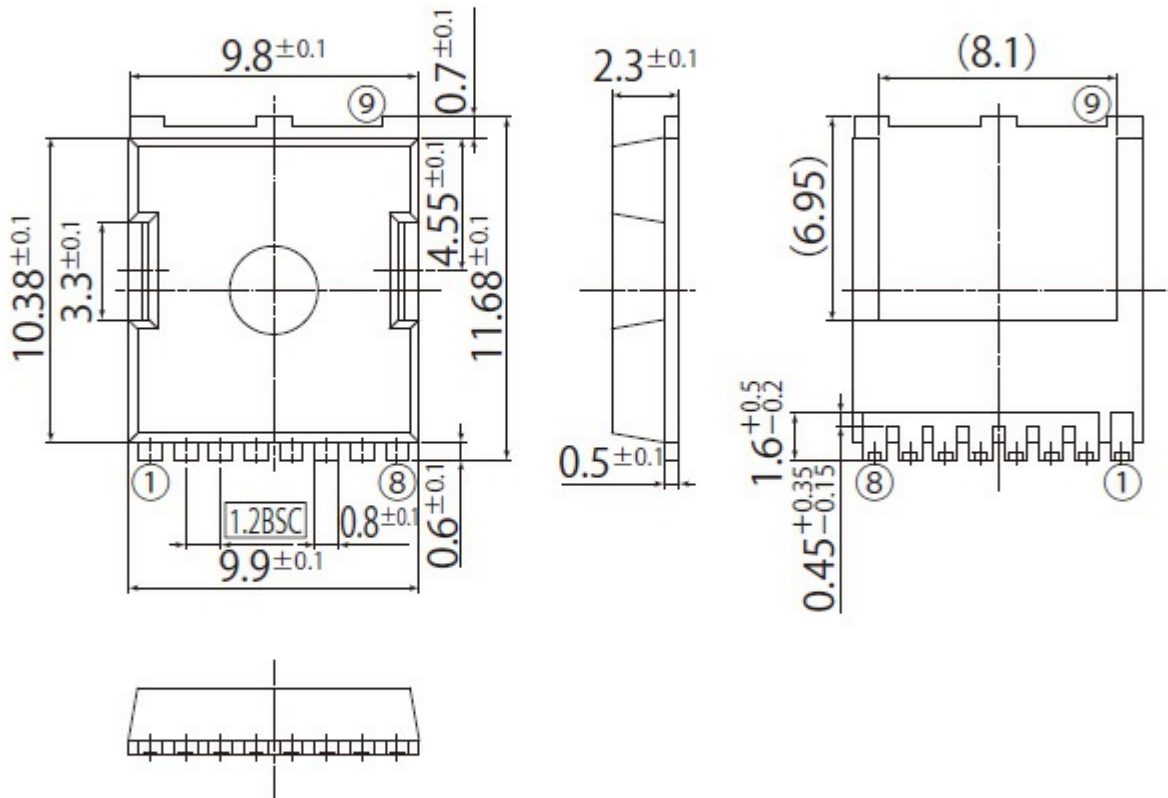
Type	Glass-epoxy
Size	1 inch ²
Thickness	1.6 mm
Conductor thickness	70 μm
Pattern area	164.16 mm ²





G9

JEDEC Code	MO-299B
JEITA Code	-
House Name	LG(TOLL)



Notes

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