P85FG6EAL

Power MOSFETs
60V, 85A, N-channel

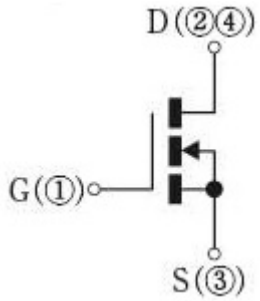
Feature

- N-channel
- SMD
- Low Ron
- 4.5V Gate Drive
- Low Capacitance
- Pb free terminal
- RoHS:Yes

OUTLINE

Package (House Name): FG
Package (JEDEC Code): TO-263AB

Equivalent circuit



Absolute Maximum Ratings (unless otherwise specified : Tc=25℃)

Item	Symbol	Conditions	Ratings	Unit
Storage temperrature	Tstg		-55 to 150	℃
Channel tempertature	Tch		150	℃
Drain-source voltage	V_{DSS}		60	V
Gate-source voltage	V_{GSS}		±20	V
Continuous drain current(DC)	I_D		85	A
Continuous drain current(Peak)	I_{DP}	Pulse width 10μs, duty=1/100	340	A
Total power dissipation	P_T		156	W
Single avalanche current	I_{AS}	Starting Tch=25℃ Tch≦150℃	59	A
Single avalanche energy	E_{AS}	Starting Tch=25℃ Tch≦150℃	435	mJ

※ :See the original Specifications

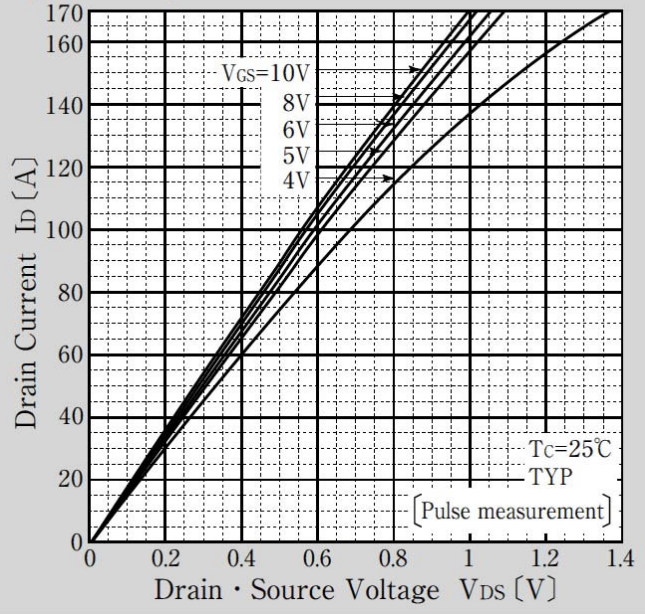
Electrical Characteristics (unless otherwise specified : Tc=25℃)

Item	Symbol	Conditions	Ratings			Unit
			MIN	TYP	MAX	
Drain-Source breakdown voltage	$V_{(BR)DSS}$	ID=1mA, VGS=0V	60			V
Zero gate voltage drain current	I_{DSS}	VDS=60V, VGS=0V			1	μA
Gate-source leakage current	I_{GSS}	VGS=±20V, VDS=0V			±0.1	μA
Forward transconductance	g_{fs}	ID=42.5A, VDS=10V	27.5	64		S
Static drain-source on-state resistance	$R_{DS(ON)}$	ID=42.5A, VGS=10V		0.0032	0.0043	Ω
Static drain-source on-state resistance	$R_{DS(ON)}$	ID=42.5A, VGS=4.5V		0.004	0.0053	Ω
Gate threshold voltage	Vth	ID=1mA, VDS=10V	1.5	2	2.5	V
Source-drain diode forward voltage	V_{SD}	IS=85A, VGS=0V			1.5	V
Thermal resistance	Rth(j-c)	Junction to case			0.8	℃/W
Total gate charge	Qg	VDD=48V, VGS=10V, ID=85A		105		nC
Gate to source charge	Qgs	VDD=48V, VGS=10V, ID=85A		17		nC
Gate to drain charge	Qgd	VDD=48V, VGS=10V, ID=85A		35		nC
Input capacitance	Ciss	VDS=25V, VGS=0V, f=1MHz		5700		pF
Reverce transfer capacitnce	Crss	VDS=25V, VGS=0V, f=1MHz		360		pF
Output capacitance	Coss	VDS=25V, VGS=0V, f=1MHz		690		pF
Turn-on delay time	td(on)	ID=42.5A, RL=0.71Ω, VDD=30V, Rg=0Ω, VGS(+)=10V, VGS(-)=0V		80		ns
Rise time	tr	ID=42.5A, RL=0.71Ω, VDD=30V, Rg=0Ω, VGS(+)=10V, VGS(-)=0V		350		ns
Turn-off delay time	td(off)	ID=42.5A, RL=0.71Ω, VDD=30V, Rg=0Ω, VGS(+)=10V, VGS(-)=0V		450		ns
Fall time	tf	ID=42.5A, RL=0.71Ω, VDD=30V, Rg=0Ω, VGS(+)=10V, VGS(-)=0V		370		ns

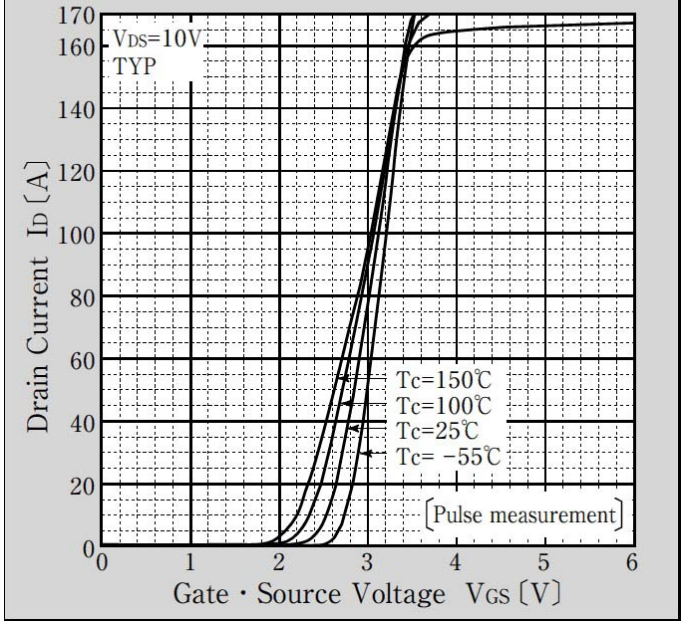
※ ：See the original Specifications

CHARACTERISTIC DIAGRAMS

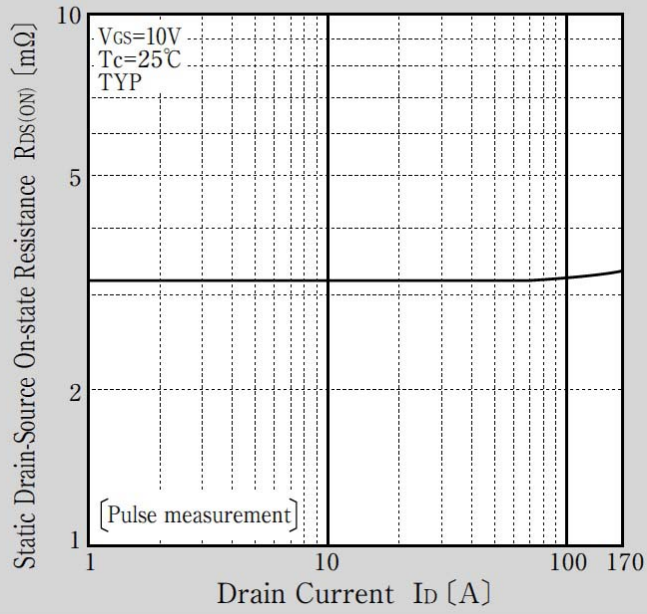
Typical Output Characteristics



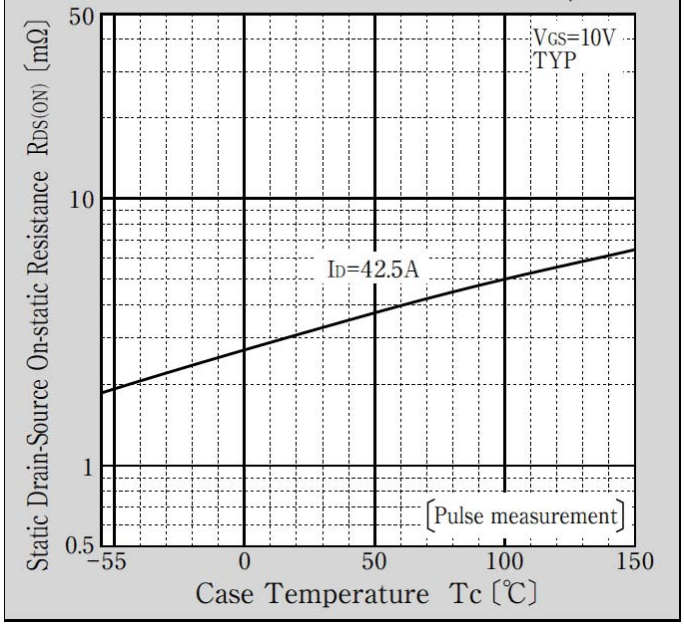
Transfer Characteristics



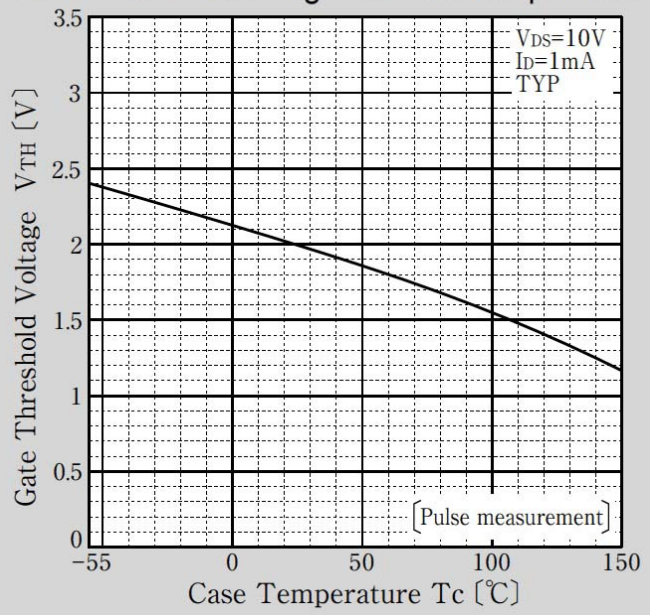
Static Drain-Source On-state Resistance vs Drain Current



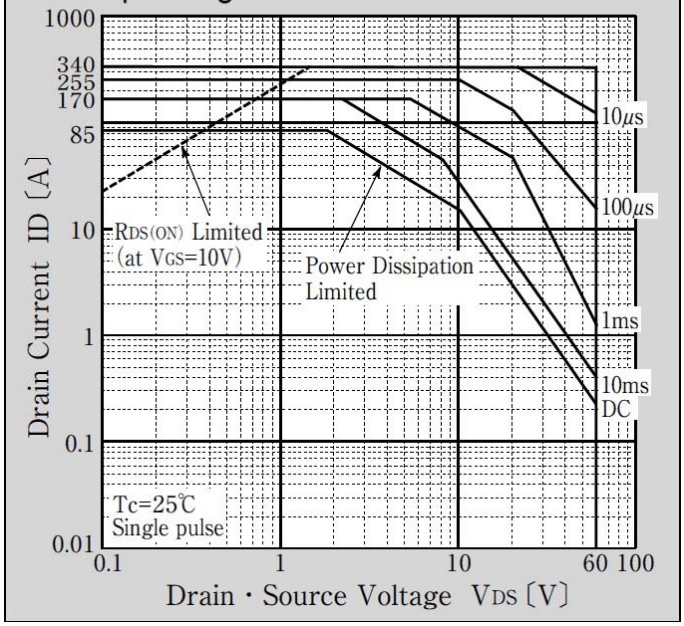
Static Drain-Source On-static Resistance vs Case Temperature



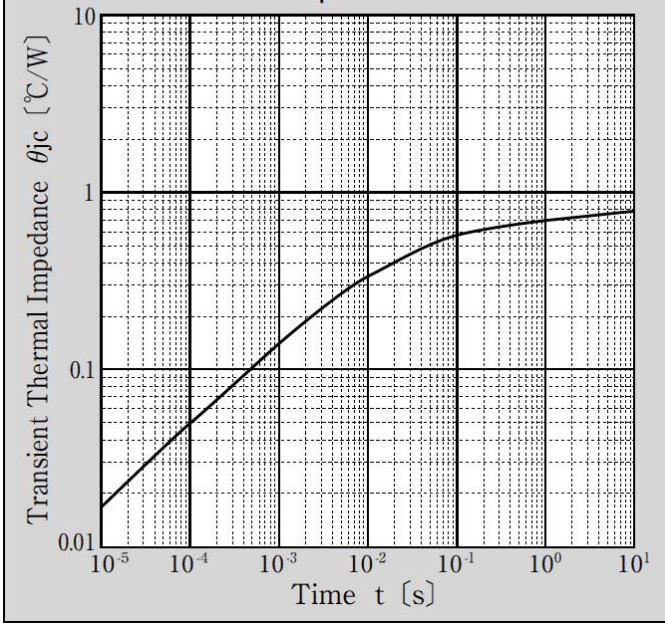
Gate Threshold Voltage vs Case Temperature



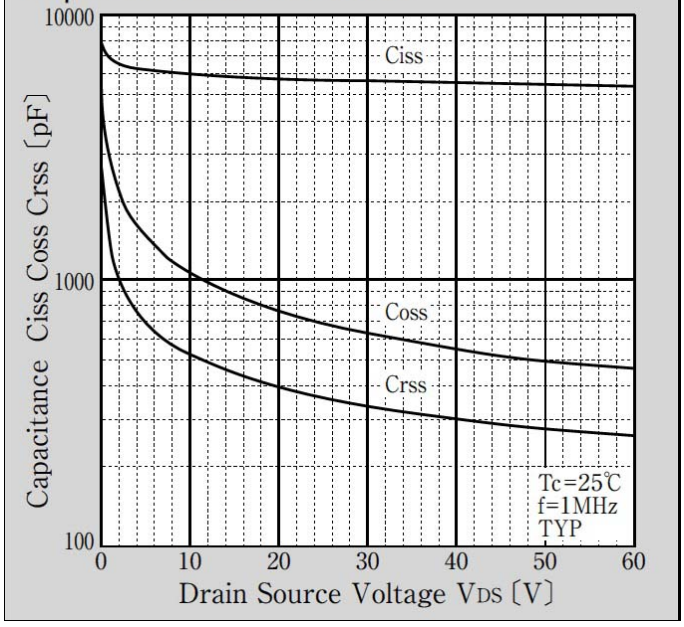
Safe Operating Area



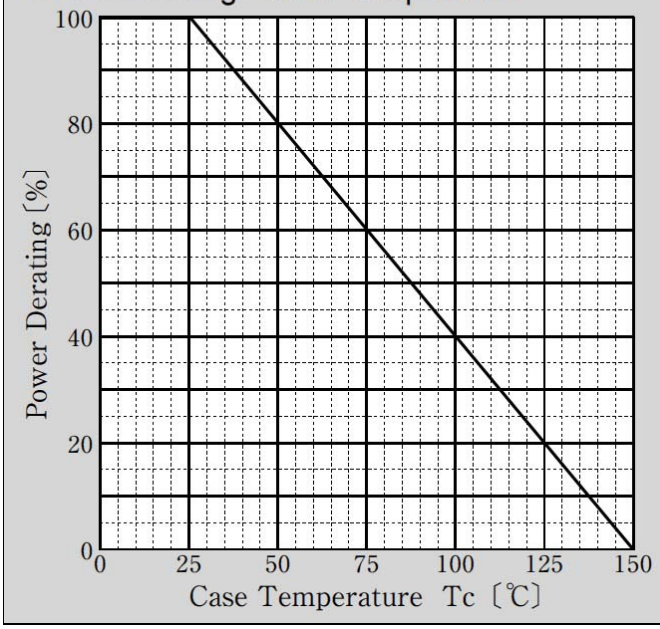
Transient Thermal Impedance



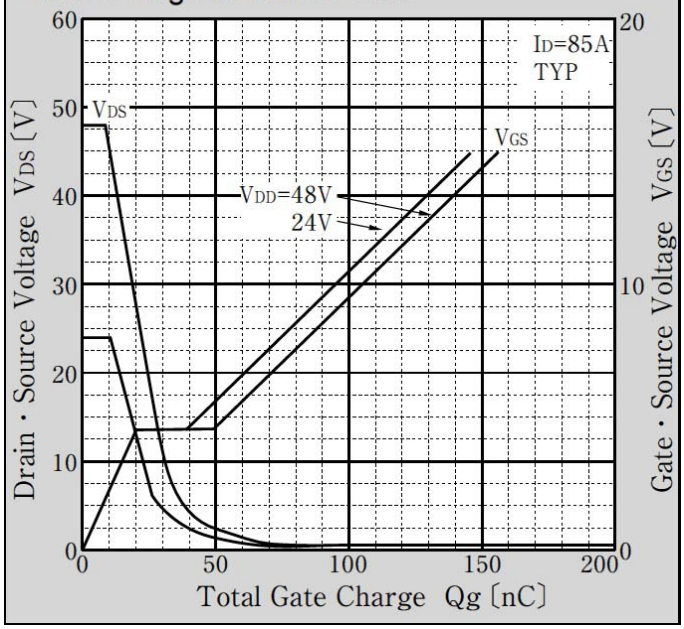
Capacitance Characteristics



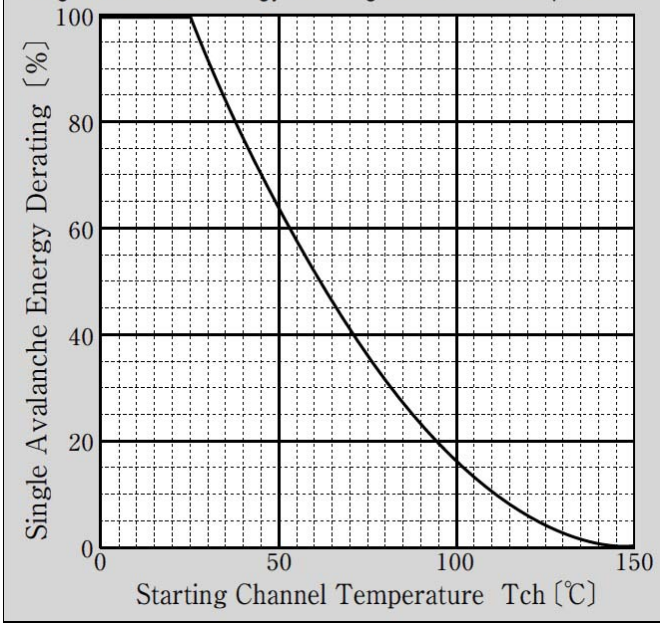
Power Derating - Case Temperature



Gate Charge Characteristics



Single Avalanche Energy Derating vs Channel Temperature



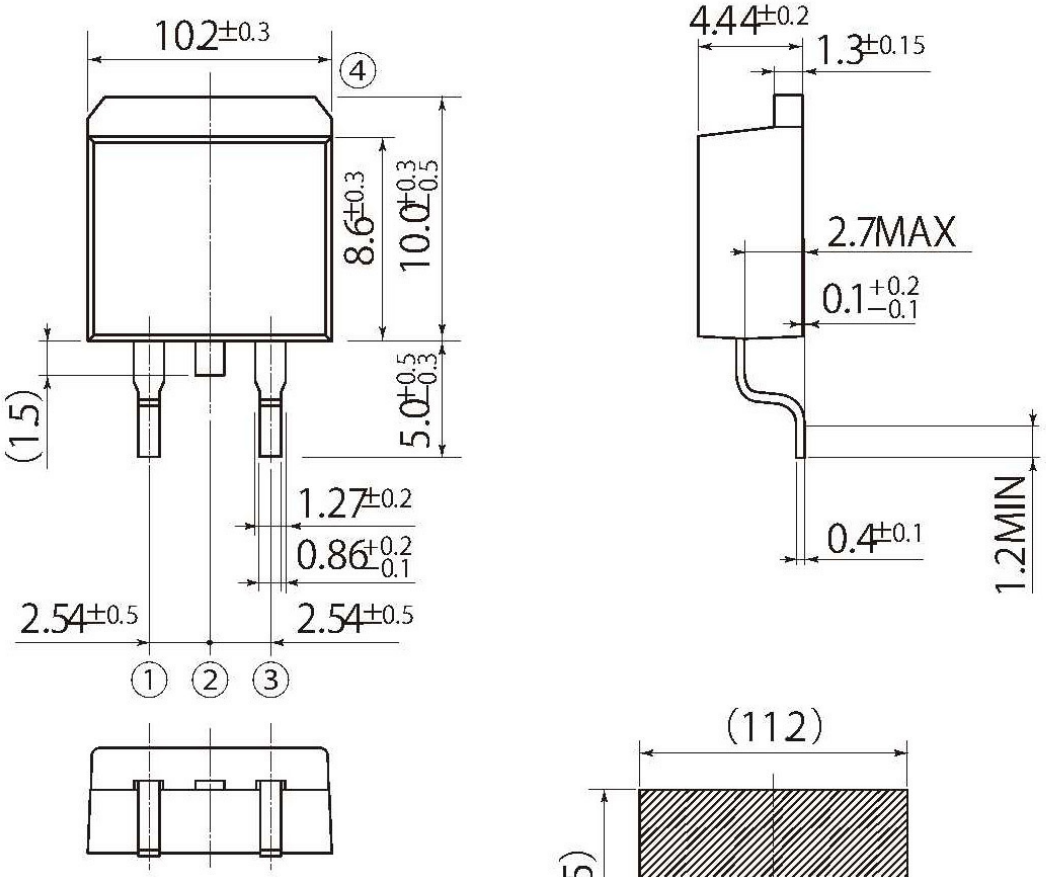
Outline Dimensions

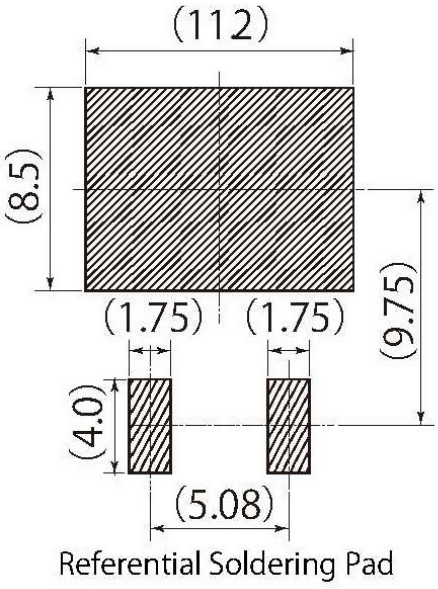
unit:mm

scale: 3/1

H4

JEDEC Code	TO-263AB
JEITA Code	–
House Name	FG





Referential Soldering Pad

• Optimize soldering pad to the board design and soldering condition.

Notes

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