



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



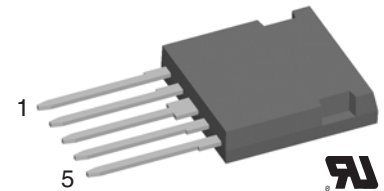
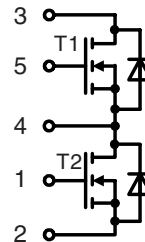
Trench Power MOSFET

Phaseleg Topology
in ISOPLUS i4-PAC™

$$I_{D25} = 150 \text{ A}$$

$$V_{DSS} = 75 \text{ V}$$

$$R_{DS(on) \text{ typ}} = 3.2 \text{ m}\Omega$$



MOSFET T1/T2

Symbol	Conditions	Maximum Ratings	
V_{DSS}	$T_{VJ} = 25^{\circ}\text{C}$ to T_{VJmax}	75	V
V_{GS}		± 20	V
I_{D25}	$T_C = 25^{\circ}\text{C}$	150	A
I_{D90}	$T_C = 90^{\circ}\text{C}$	120	A
I_{F25}	(body diode) $T_C = 25^{\circ}\text{C}$	150	A
I_{F90}	(body diode) $T_C = 90^{\circ}\text{C}$	100	A

Symbol	Conditions	Characteristic Values ($T_{VJ} = 25^{\circ}\text{C}$, unless otherwise specified)		
		min.	typ.	max.
R_{DSon}	$V_{GS} = 10 \text{ V}; I_D = I_{D90};$ on chip level		3.2	4.2 m Ω
V_{GSth}	$V_{DS} = 20 \text{ V}; I_D = 1 \text{ mA}$	2		4 V
I_{DSS}	$V_{DS} = 75 \text{ V}; V_{GS} = 0 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		0.1	10 μA mA
I_{GSS}	$V_{GS} = \pm 20 \text{ V}; V_{DS} = 0 \text{ V}$			200 nA
Q_g Q_{gs} Q_{gd}	$V_{GS} = 10 \text{ V}; V_{DS} = 60 \text{ V}; I_D = 50 \text{ A}$		225 30 85	nC nC nC
$t_{d(on)}$ t_r $t_{d(off)}$ t_f			75 100 400 90	ns ns ns ns
E_{on} E_{off} $E_{rec(off)}$			0.31 0.5 0.05	mJ mJ mJ
V_F	(body diode) $I_F = 75 \text{ A}; V_{GS} = 0 \text{ V}$		1.1	1.5 V
t_{rr}	(body diode) $I_F = 20 \text{ A}; -di/dt = 100 \text{ A}/\mu\text{s}; V_{DS} = 30 \text{ V}$		90	ns
R_{thJC} R_{thJH}	with heat transfer paste		1.0	0.6 K/W K/W

Features

- trench MOSFET
 - very low on state resistance R_{DSon}
 - fast switching
- ISOPLUS i4-PAC™ package
 - isolated back surface
 - low coupling capacity between pins and heatsink
 - enlarged creepage towards heatsink
 - application friendly pinout
 - low inductive current path
 - high reliability
 - industry standard outline
 - UL registered E 72873

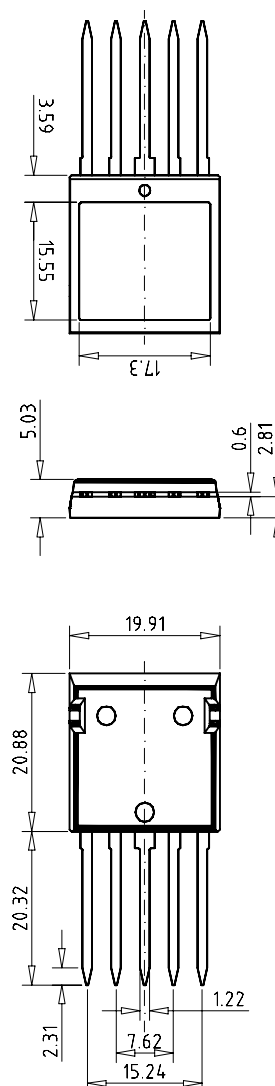
Applications

- automotive
 - AC drives - starter generator for 42V etc.
 - choppers - replacing series resistors for DC drives, heating etc.
 - DC-DC converters - between 12V and 42V system etc.
 - electronic switches - replacing relays and fuses
- power supplies
 - DC-DC converters
 - solar inverters
- battery supplied systems
 - choppers or inverters for drives in hand held tools
 - battery chargers

Component

Symbol	Conditions	Maximum Ratings	
I_{RMS}	per pin	75	A
T_{VJ}		-55...+175	°C
T_{stg}		-55...+125	°C
V_{ISOL}	$I_{ISOL} \leq 1 \text{ mA}; 50/60 \text{ Hz}$	2500	V~
F_c	mounting force with clip	20...120	N

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
$R_{pin-chip}$	$R_{pin-P2} > R_{DS(on)} + R_{pin-chip}$		1.6	mΩ
C_p	coupling capacity between shorted pins and mounting tab in the case		40	pF
d_s, d_A	pin - pin	1.7		mm
d_s, d_A	pin - backside metal	5.5		mm
Weight			9	g

Dimensions in mm (1 mm = 0.0394")


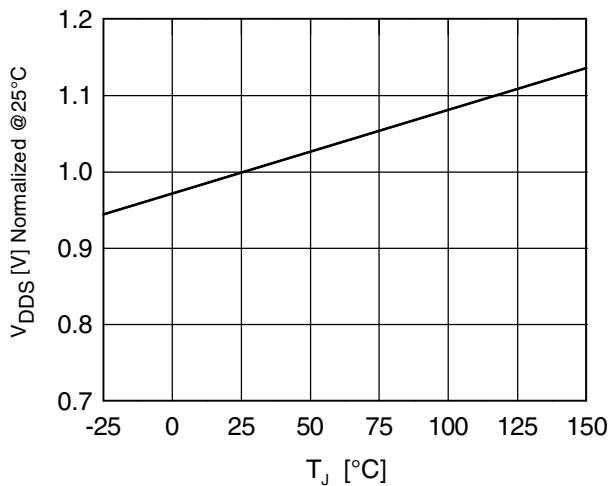


Fig. 1 Drain source breakdown voltage V_{DSS} vs. junction temperature T_J

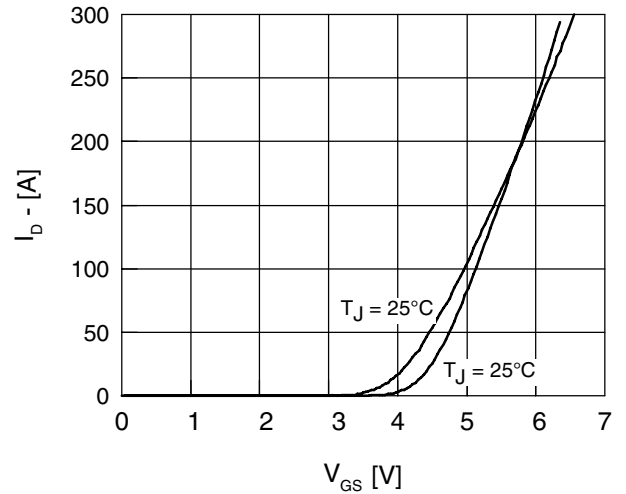


Fig. 2 Typical transfer characteristic

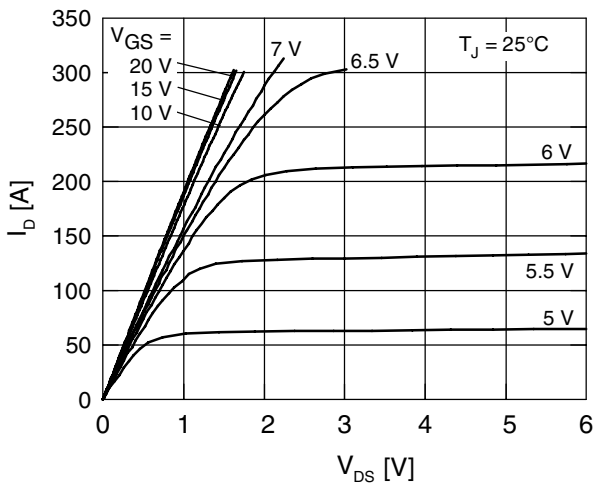


Fig. 3 Typical output characteristic

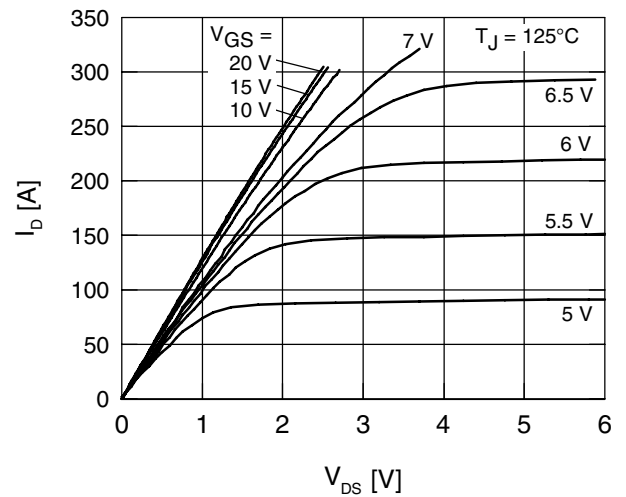


Fig. 4 Typical output characteristic

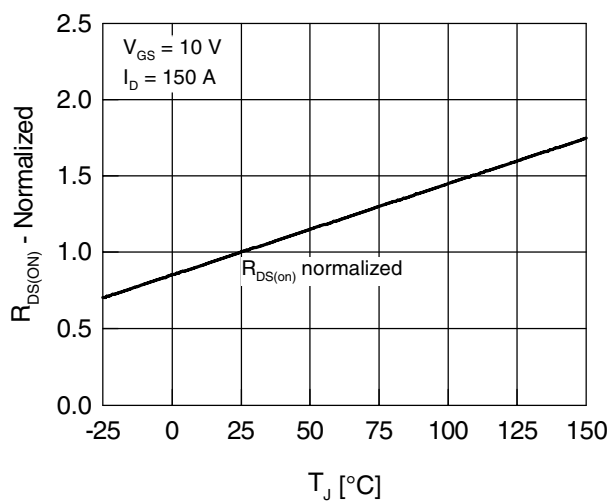


Fig. 5 Drain source on-state resistance $R_{DS(on)}$ vs. junction temperature T_J

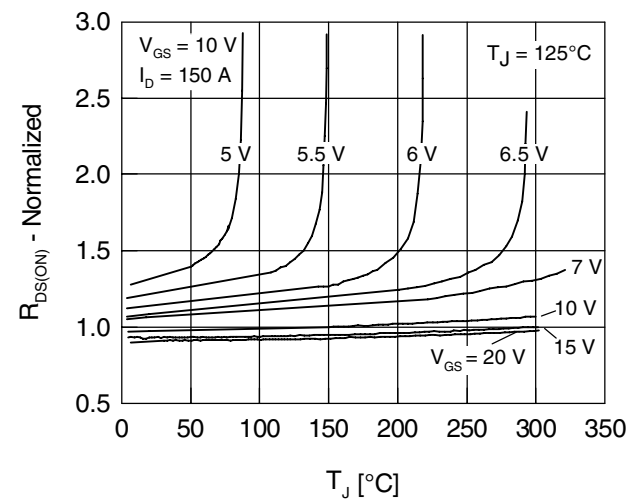


Fig. 6 Drain source on-state resistance $R_{DS(on)}$ versus I_D

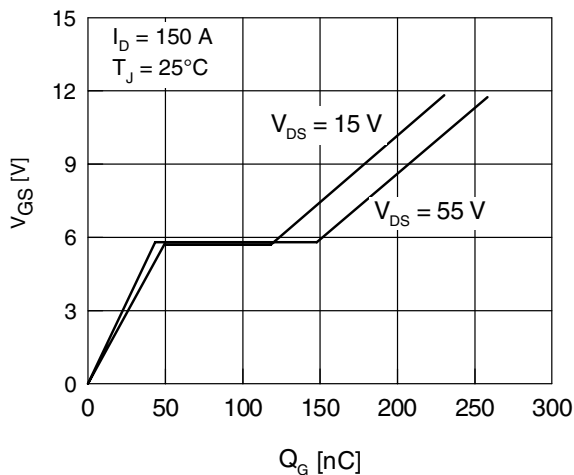


Fig. 7 Gate charge characteristic

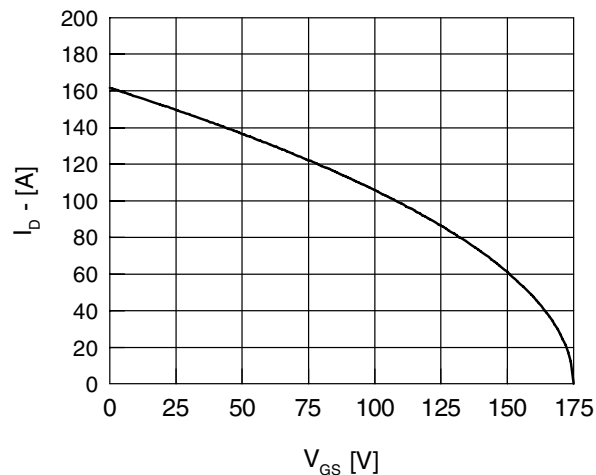


Fig. 8 Drain current I_D vs. case temperature T_C

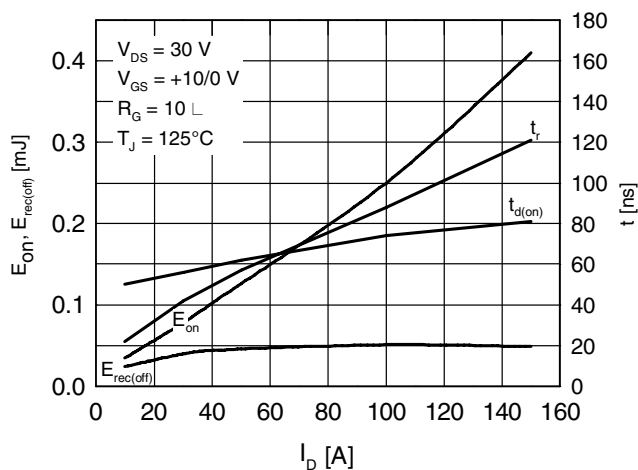


Fig. 9 Typ. turn-on energy & switching times vs. collector current, inductive switching

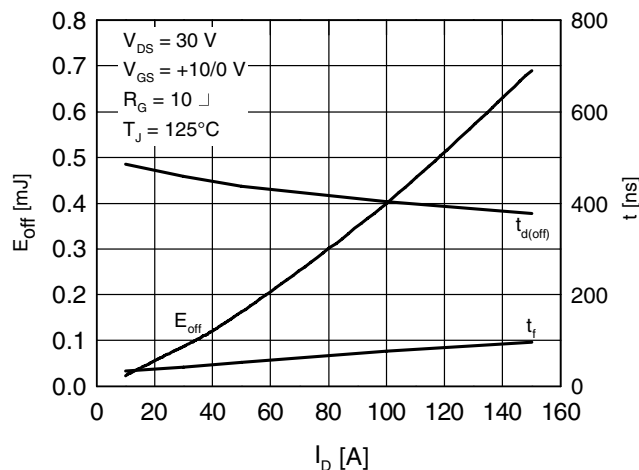


Fig. 10 Typ. turn-off energy & switching times vs. collector current, inductive switching

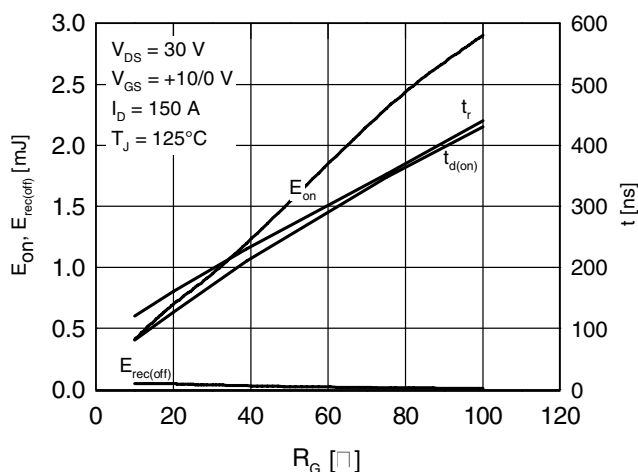


Fig. 11 Typ. turn-on energy & switching times vs. gate resistor, inductive switching

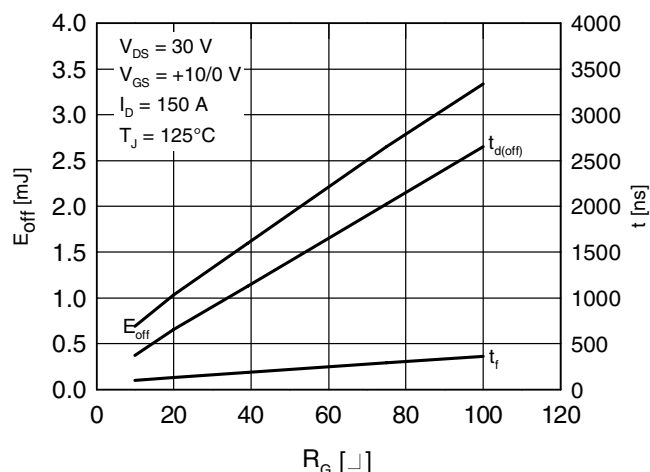


Fig. 12 Typ. turn-off energy & switching times vs. gate resistor, inductive switching

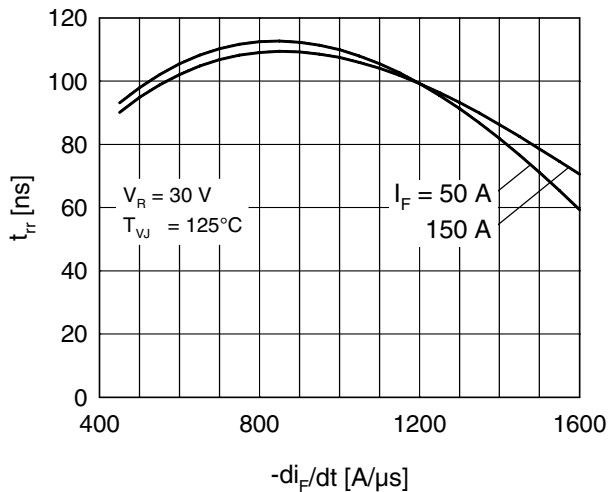


Fig. 13 Reverse recovery time t_{rr} of the body diode vs. di/dt

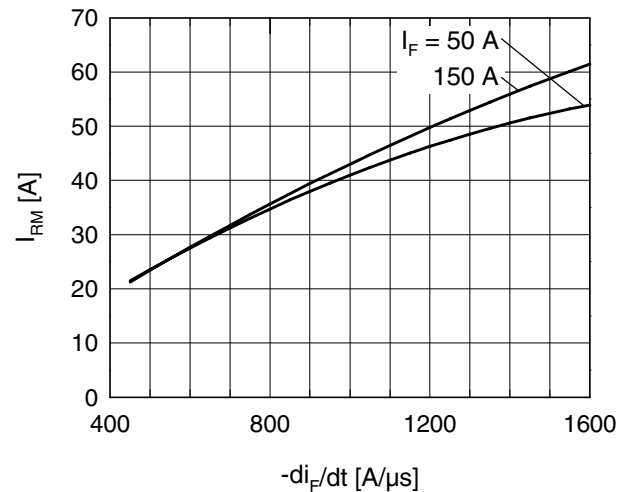


Fig. 14 Reverse recovery current I_{RM} of the body diode vs. di/dt

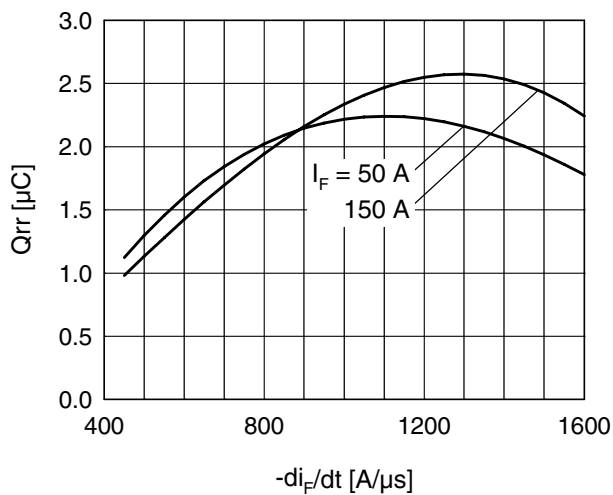


Fig. 15 Reverse recovery charge Q_{rr} of the body diode vs. di/dt

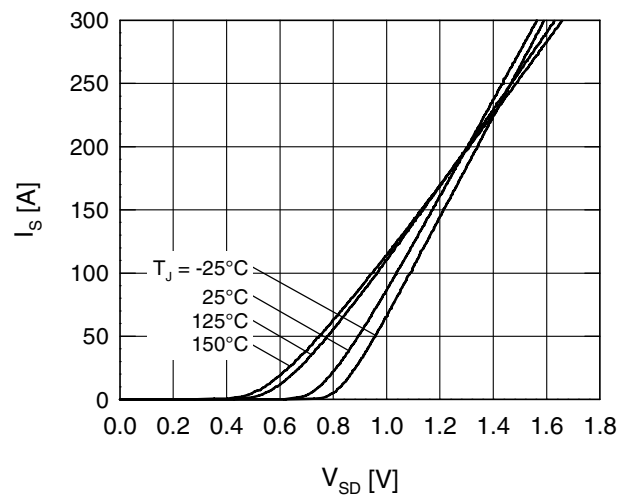


Fig. 16 Source current I_S vs. source drain voltage V_{SD} (body diode)

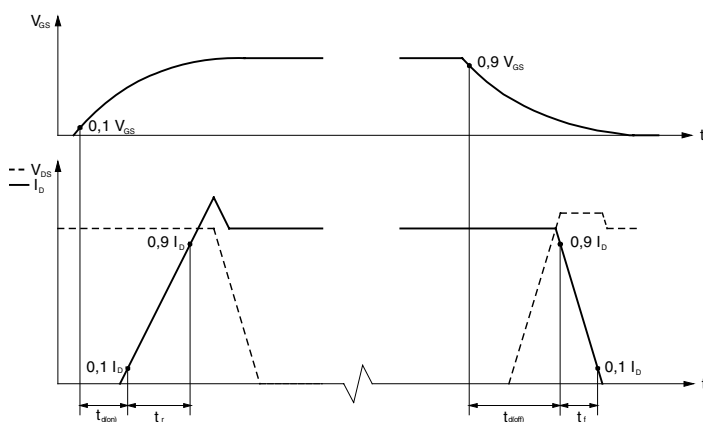


Fig. 17 Definition of switching times

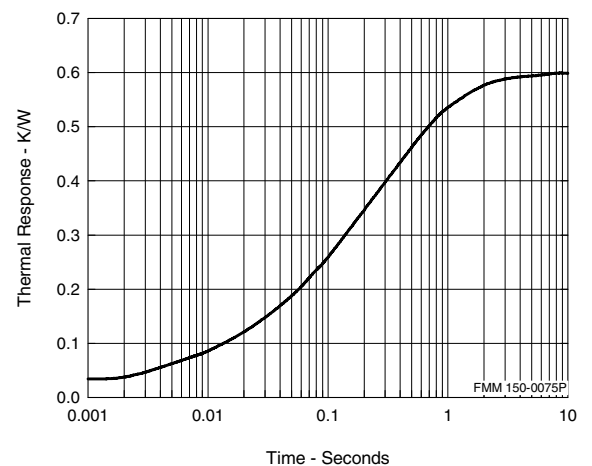


Fig. 18 Therm. impedance junction to case Z_{thJC}