P-Channel Enhancement Mode Power MOSFET

Description

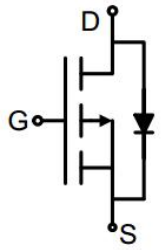
The 25P06 uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge. It can be used in a wide variety of applications.

General Features

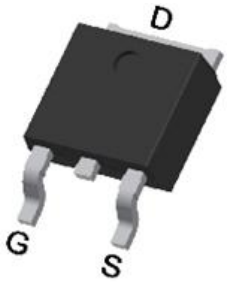
- V_{DS} -60V
- I_D (at V_{GS} = -10V) -32A
- $R_{DS(ON)}$ (at V_{GS} = -10V) < 40mΩ
- 100% Avalanche Tested
- RoHS Compliant

Application

- Power switch
- DC/DC converters



Schematic diagram



TO-252

Ordering Information

Device	Package	Marking	Packaging
25P06	TO-252	25P06	2500pcs/Reel

Absolute Maximum Ratings T_C = 25ºC, unless otherwise noted

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	-60	V
Continuous Drain Current	T_C = 25ºC	I_D	-32	A
	T_C = 100ºC		-20	
Pulsed Drain Current (note1)		I_{DM}	-128	A
Gate-Source Voltage		V_{GS}	±20	V
Power Dissipation		P_D	50	W
Single pulse avalanche energy （note2）		E_{AS}	64	mJ
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 To 150	ºC

Thermal Resistance

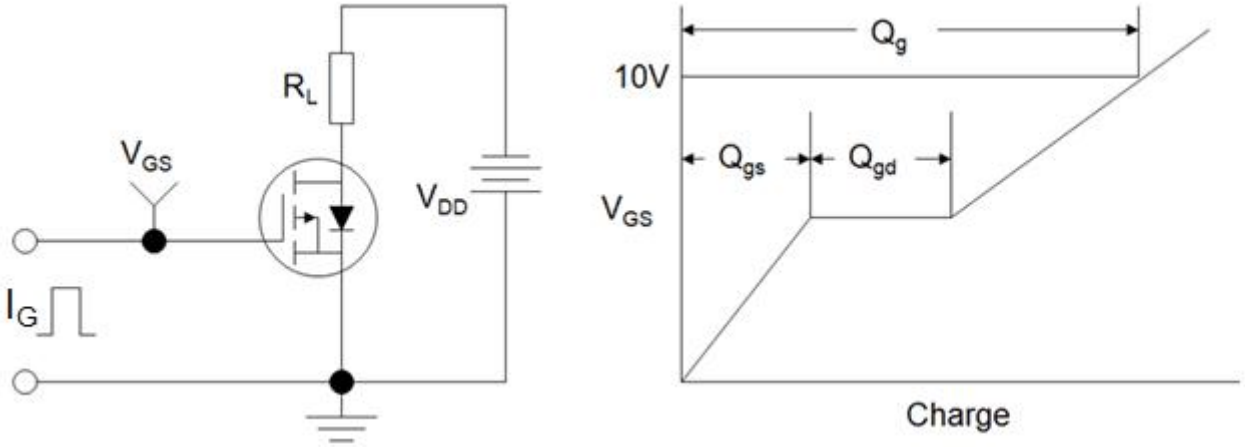
Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-Ambient	R_{thJA}	40	ºC/W
Thermal Resistance, Junction-to-Case	R_{thJC}	2.5	ºC/W

Specifications T_J = 25ºC, unless otherwise noted						
Parameter	**Symbol**	**Test Conditions**	**Value**			**Unit**
			Min.	**Typ.**	**Max.**	
Static Parameters						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = -250μA	-60	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -60V, V_{GS} = 0V	--	--	-1	μA
Gate-Source Leakage	I_{GSS}	V_{GS} = ±20V	--	--	±100	nA
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-2.0	-2.3	-3.0	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -12A	--	31	40	mΩ
Forward Transconductance	g_{FS}	V_{DS} = -10V,I_D = -12A	--	16	--	S
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = -30V, f = 1.0MHz	--	2600	--	pF
Output Capacitance	C_{oss}		--	120	--	
Reverse Transfer Capacitance	C_{rss}		--	115	--	
Total Gate Charge	Q_g	V_{DD} = -30V, I_D = -12A, V_{GS} = -10V	--	44	--	nC
Gate-Source Charge	Q_{gs}		--	9	--	
Gate-Drain Charge	Q_{gd}		--	10	--	
Turn-on Delay Time	$t_{d(on)}$	V_{DD} = -30V, I_D = -12A, R_G = 3Ω	--	10	--	ns
Turn-on Rise Time	t_r		--	6	--	
Turn-off Delay Time	$t_{d(off)}$		--	47	--	
Turn-off Fall Time	t_f		--	12	--	
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I_S	T_C = 25ºC	--	--	-32	A
Body Diode Voltage	V_{SD}	T_J = 25ºC, I_{SD} = -12A, V_{GS} = 0V	--	--	-1.2	V
Reverse Recovery Charge	Q_{rr}	I_F = -12A, V_{GS} = 0V di/dt=-500A/us	--	107	--	nC
Reverse Recovery Time	T_{rr}		--	23	--	ns

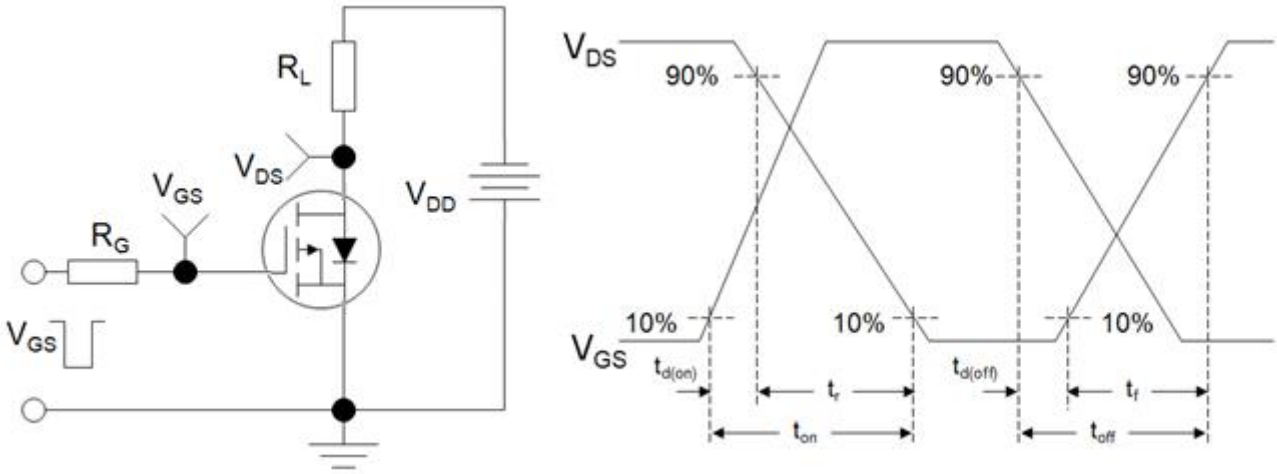
Notes

1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. EAS condition : Tj=25℃ ,VDD=-50V,VGS=-10V,L=0.5mH,Rg=25Ω
   The table shows the minimum avalanche energy, which is 169mJ when the device is tested until failure
3. Identical low side and high side switch with identical R_G

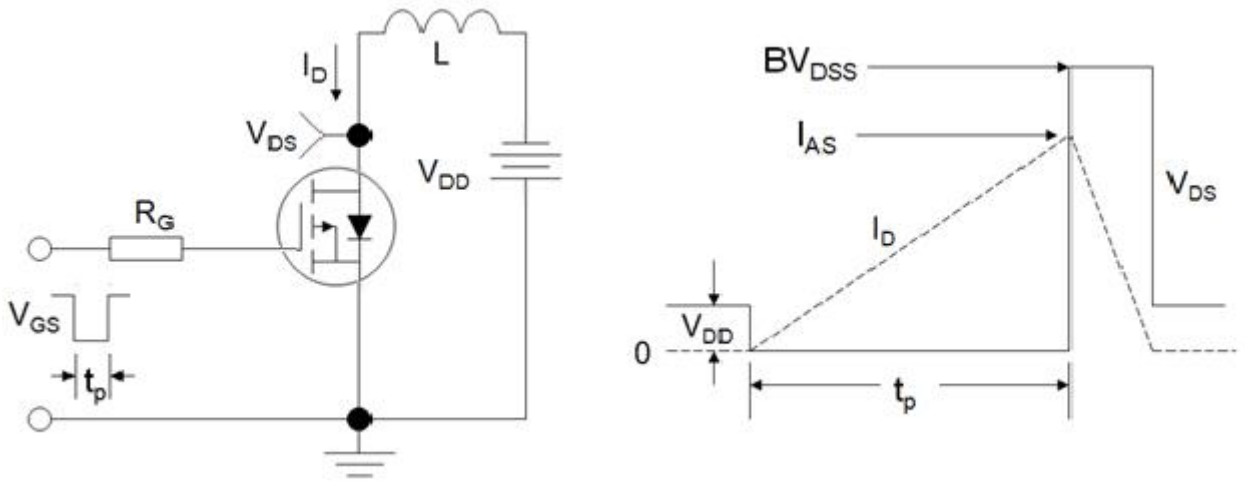
Gate Charge Test Circuit



Switch Time Test Circuit



EAS Test Circuit



Typical Characteristics T_J = 25ºC, unless otherwise noted

Figure 1. Output Characteristics

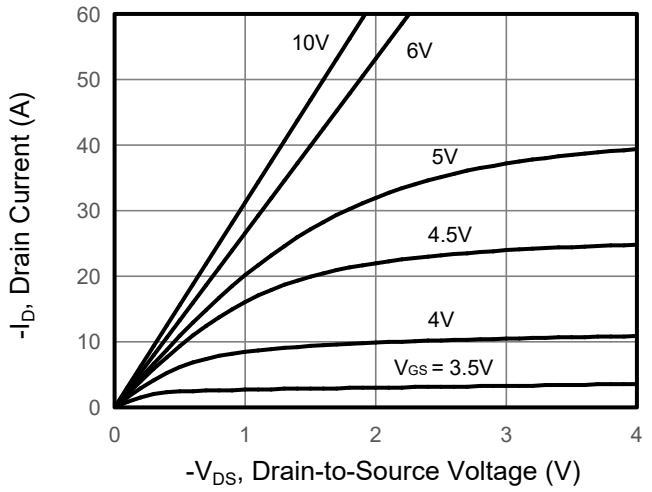


Figure 2. Transfer Characteristics

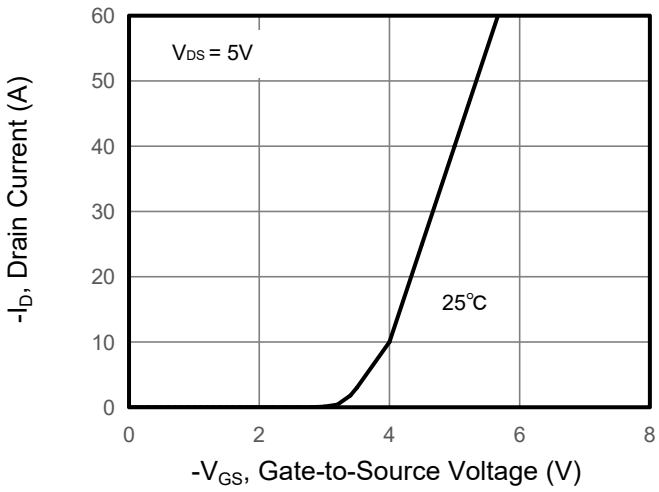


Figure 3.Drain Source On Resistance

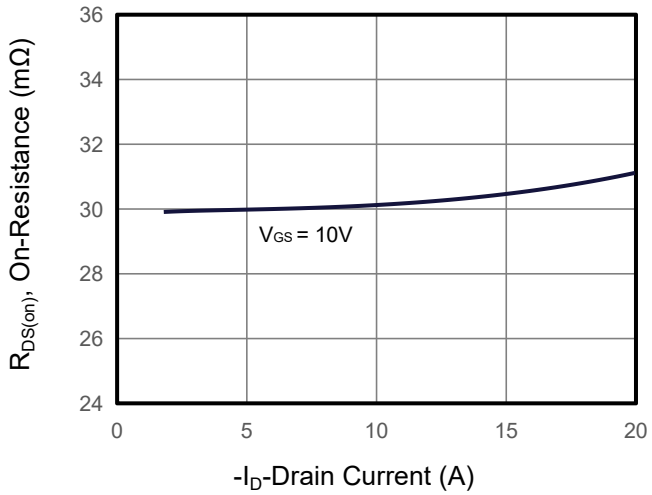


Figure 4. Gate Charge

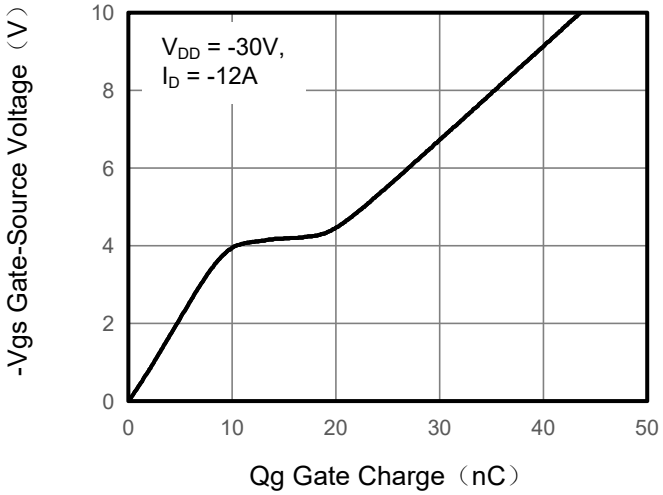


Figure 5. Capacitance

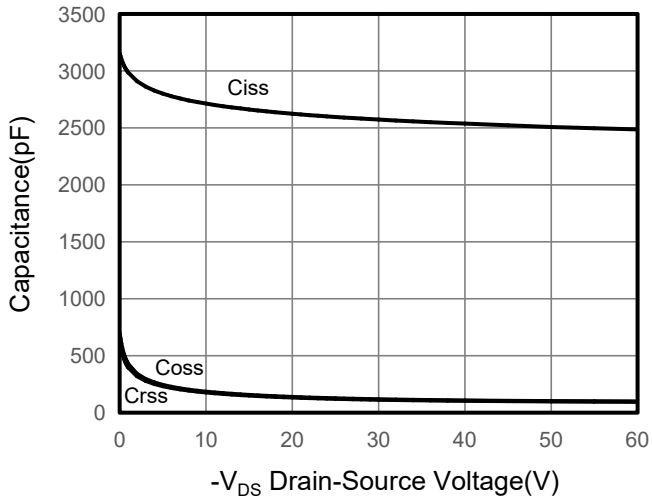
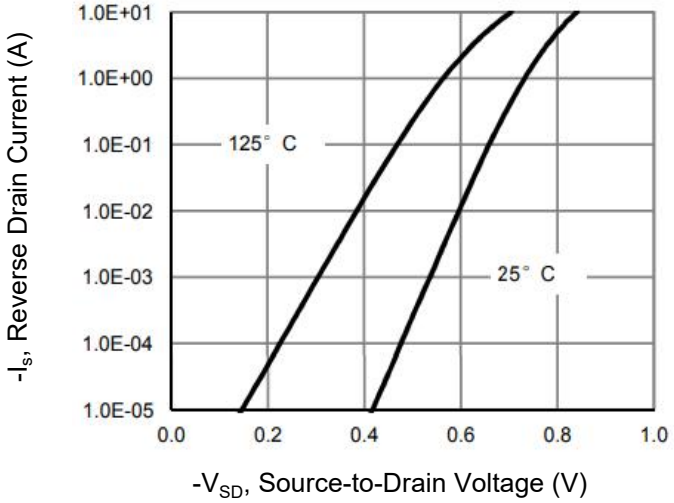


Figure 6. Source-Drain Diode Forward



Typical Characteristics T_J = 25ºC, unless otherwise noted

Figure 7. Drain-Source On-Resistance

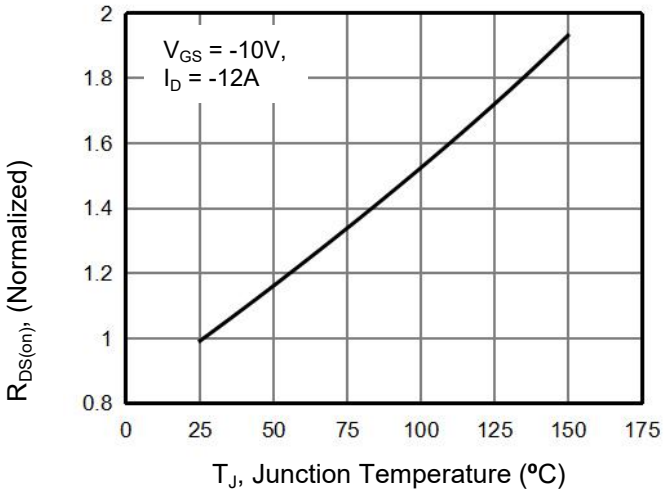


Figure 8. Safe Operation Area

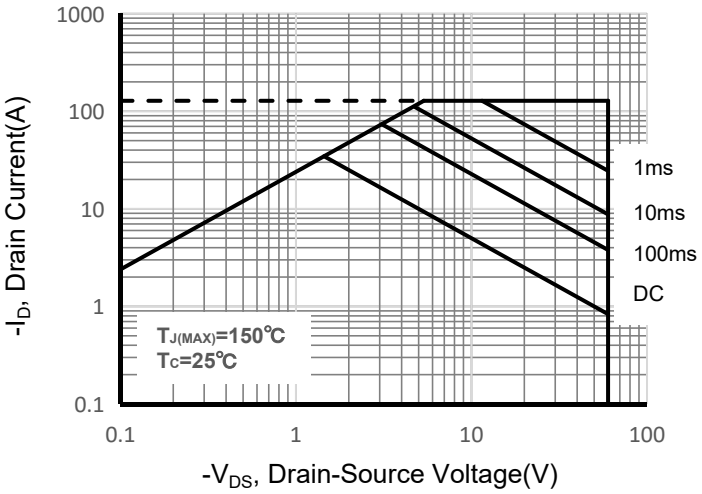


Figure 9. Maximum Continuous Drain Current vs Case Temperature

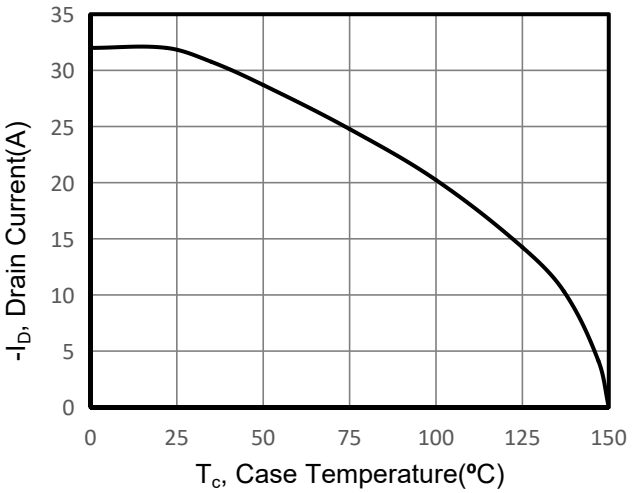
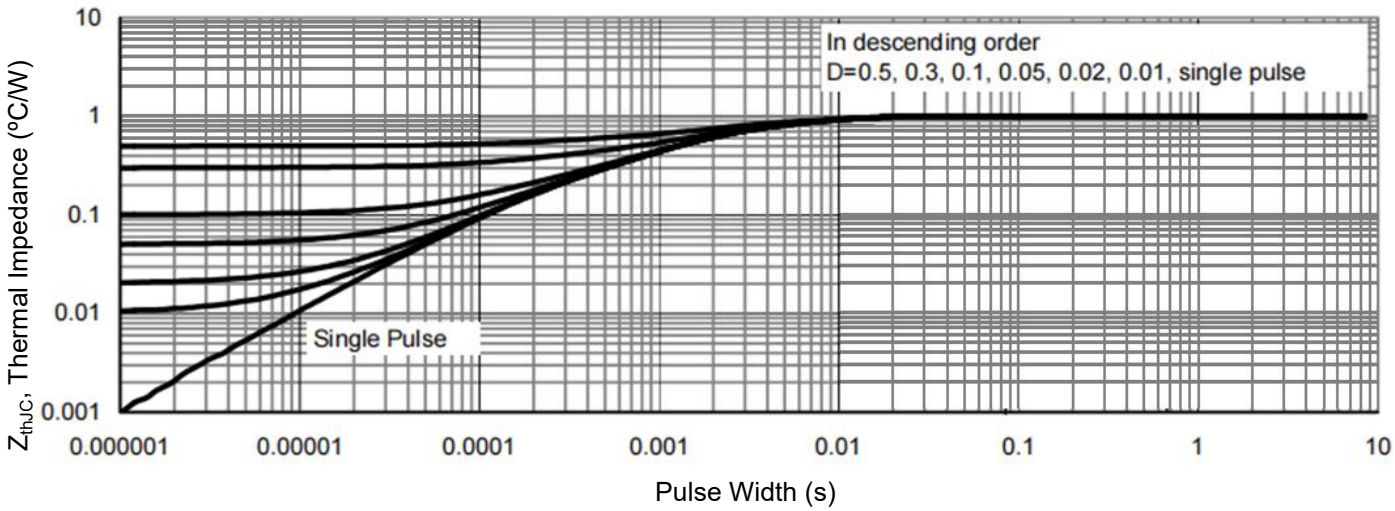
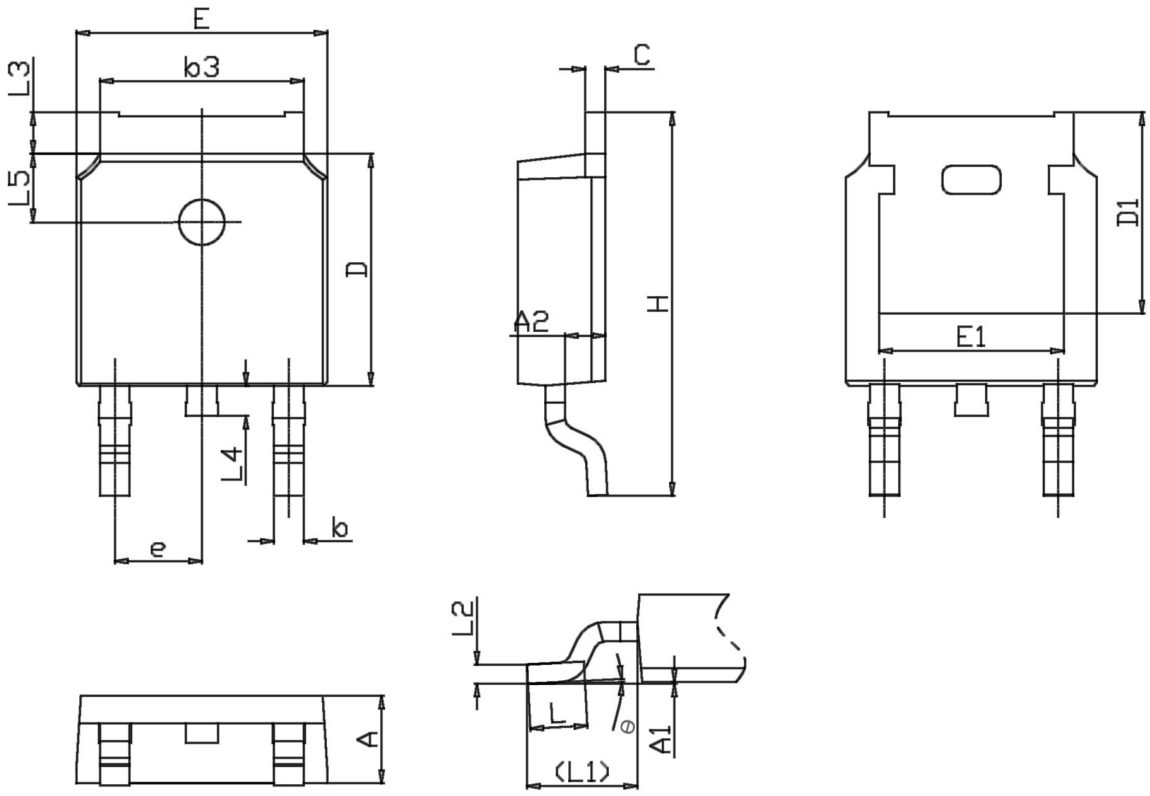


Figure 10. Normalized Maximum Transient Thermal Impedance



TO-252 Package Information



SYMBOL	mm		
	MIN	NOM	MAX
A	2.20	2.30	2.38
A1	0.00	-	0.12
A2	0.97	1.07	1.17
b	0.68	0.78	0.90
b3	5.20	5.33	5.46
c	0.43	0.53	0.61
D	5.98	6.10	6.22
D1		5.30REF	
E	6.40	6.60	6.73
E1	4.63	-	-
e		2.286BSC	
H	9.40	10.10	10.50
L	1.38	1.50	1.75
L1		2.90REF	
L2		0.51BSC	
L3	0.88	-	1.28
L4	0.50	-	1.00
L5	1.65	1.80	1.95
θ	0°	-	8°

ENTEGRECİ

Bu belge www.entegreci.com üzerinden sunulmaktadır.

Elektronik komponent tedarikinde Entegreci

Entegreci, Eskişehir merkezli, Türkiye geneline satış yapan bir elektronik komponent mağazasıdır. Entegreler (IC), mikrodenetleyiciler, transistörler, diyotlar, pasif elemanlar, konnektörler, modüller ve geliştirme kartları tek adetten seri üretim adetlerine kadar satılır. Ürün sayfalarında güncel stok durumunu, fiyatı ve datasheet bağlantısını bulabilirsiniz.

Parça koduyla arama

Üretici parça numarasını yazın; stok ve fiyatı hemen görün.

www.entegreci.com

Ürün kategorileri

Entegreden kapasitöre tüm elektronik komponent kategorileri.

Kategorilere göz atın

Üreticiler

Aradığınız üreticinin ürünlerini tek sayfada inceleyin.

Üreticileri görün

Toplu alım ve teklif

Listede olmayan ya da yüksek adetli parçalar için teklif isteyin.

Teklif isteyin

www.entegreci.com | **destek@entegreci.com** | **0850 305 90 34**

Entegreci is an online electronic components store based in Türkiye. Search by manufacturer part number to see stock, prices and datasheets for integrated circuits, microcontrollers, transistors, passive components and connectors, or request a quote for parts that are not listed.

Bu sayfa Entegreci tarafından eklenmiştir. Belgenin önceki sayfaları asıl yayıncısına aittir ve içeriği değiştirilmemiştir; en güncel sürüm için belgenin yayıncısına başvurun.