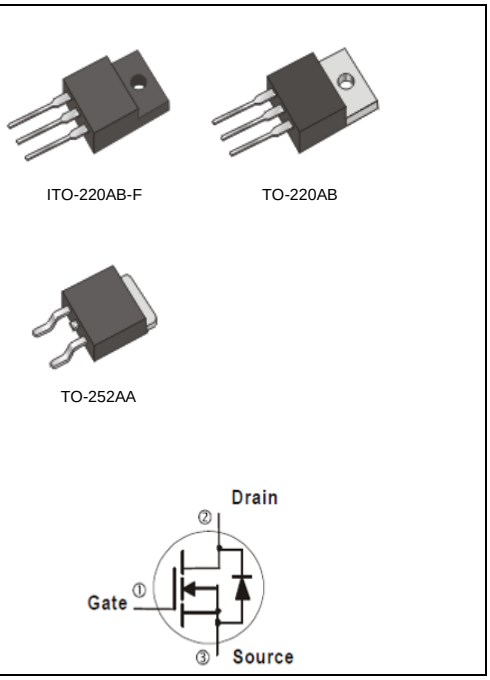
PJD60R540E / PJP60R540E / PJF60R540E

600V N-Channel Super Junction MOSFET

Voltage	600 V	Current	9 A



Features

- $R_{DS(ON)}$, V_{GS}@10V, I_D@2.8A<0.535Ω
- Fast switching speed
- Low on-resistance
- Low Noise
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : TO-252AA, TO-220AB, ITO-220AB-F
- Terminals : Solderable per MIL-STD-750, Method 2026
- TO-252AA Approx. Weight : 0.0104 ounces, 0.297grams
- TO-220AB Approx. Weight : 0.067 ounces, 1.89 grams
- ITO-220AB-F Approx. Weight : 0.068 ounces, 2 grams

Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

PARAMETER		SYMBOL	TO-220AB	ITO-220AB-F	TO-252AA	UNITS
Drain-Source Voltage		V_{DS}	600			V
Gate-Source Voltage		V_{GS}	±20			V
Continuous Drain Current (Note 4)	T_C=25°C	I_D	9			A
	T_C=100°C		5			A
Pulsed Drain Current (Note 1)		I_{DM}	18			A
Power Dissipation (Note 3)	T_C=25°C	P_D	94	48	94	W
	T_C=100°C		38	19	38	W
Continuous Drain Current (Note 4)	T_A=25°C	I_D	1.3			A
	T_A=70°C		1			A
Power Dissipation	T_A=25°C	P_D	2	1.04	2	W
	T_A=70°C		1.3	0.9	1.3	W
Single Pulse Avalanche Energy (Note 6)		E_{AS}	98			mJ
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150			°C
Typical Thermal Resistance (Note 4,5)		$R_{\theta JC}$	1.33	2.6	1.33	°C/W
		$R_{\theta JA}$	62.5	120	62.5	°C/W

- Limited only By Maximum Junction Temperature

PJD60R540E / PJP60R540E / PJF60R540E

Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=250uA	600	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	2	2.98	4	
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=2.8A	-	0.45	0.535	Ω
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=600V, V_{GS}=0V	-	-	1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Diode Forward Voltage	V_{SD}	I_S=9A, V_{GS}=0V	-	0.98	1.5	V
Transconductance	G_{FS}	V_{DS}=10V, I_D=4.5A	-	4.5	-	S
Dynamic (Note 7)						
Total Gate Charge	Q_g	V_{DS}=300V, I_D=9A, V_{GS}=10V (Note 2,3)	-	23.7	-	nC
Gate-Source Charge	Q_{gs}		-	3.5	-	
Gate-Drain Charge	Q_{gd}		-	13.3	-	
Gate Input Resistance	R_g	F = 1MHz	-	10.1	-	Ω
Input Capacitance	Ciss	V_{DS}=25V, V_{GS}=0V, f=1MHZ	-	531	-	pF
Output Capacitance	Coss		-	547	-	
Reverse Transfer Capacitance	Crss		-	69	-	
Turn-On Delay Time	$td_{(on)}$	V_{DD}=300V, I_D=4.5A, R_G=10Ω (Note 2,3)	-	11	-	ns
Turn-On Rise Time	t_r		-	26	-	
Turn-Off Delay Time	$td_{(off)}$		-	69	-	
Turn-Off Fall Time	t_f		-	26	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	9	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}	---	-	-	18	
Reverse Recovery Time	trr	V_{GS}=0V, I_S=9A	-	354	-	ns
Reverse Recovery Charge	Qrr	dI_F/ dt=100A/us (Note 2)	-	4.3	-	uC

NOTES :

1. Pulse width≤300us, Duty cycle≤2%.
2. Essentially independent of operating temperature typical characteristics.
3. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C. Ratings are based on low frequency and duty cycles to keep initial T_J =25°C.
4. The maximum current rating is package limited.
5. TO-252AA mounted on a 1 inch2 with 2oz.square pad of copper.
6. L=100mH, I_{AS}=1.4A, V_{DD}=50V, R_G=25 ohm, Starting T_J=25°C.
7. Guaranteed by design, not subject to production testing.

PJD60R540E / PJP60R540E / PJF60R540E

TYPICAL CHARACTERISTIC CURVES

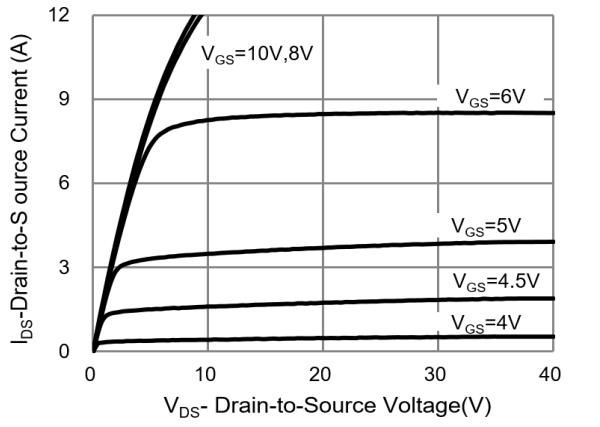


Fig.1 Output Characteristics

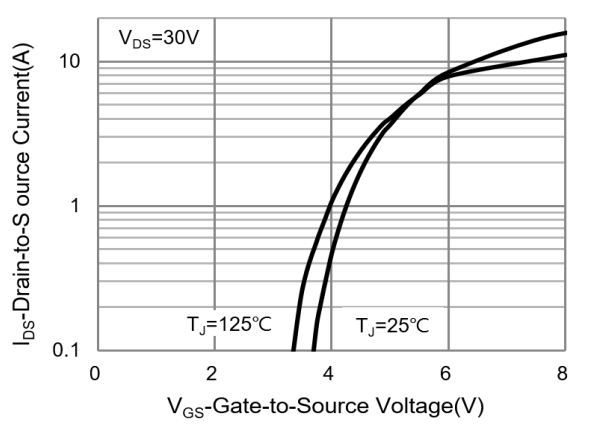


Fig.2 Transfer Characteristics

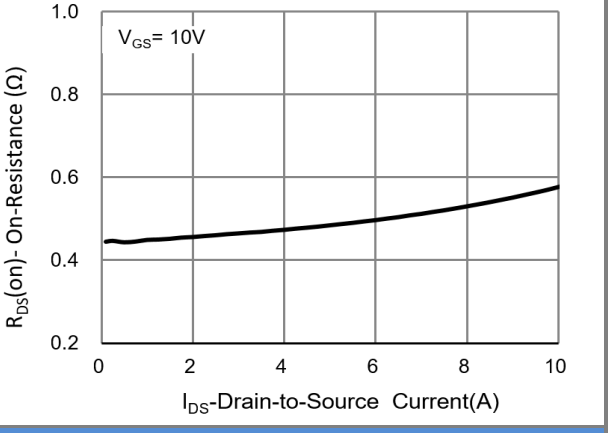


Fig.3 On-Resistance vs. Drain Current

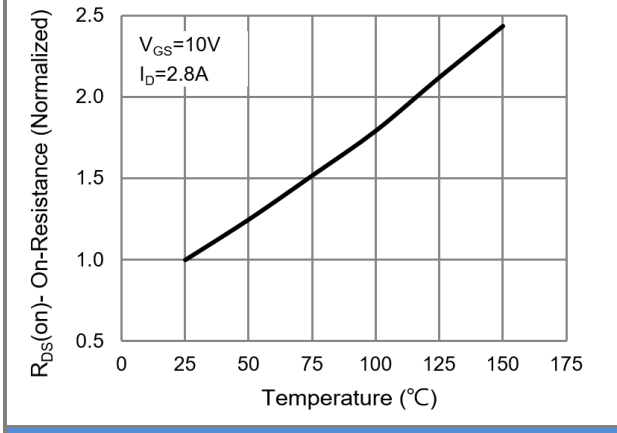


Fig.4 On-Resistance vs. Junction Temperature

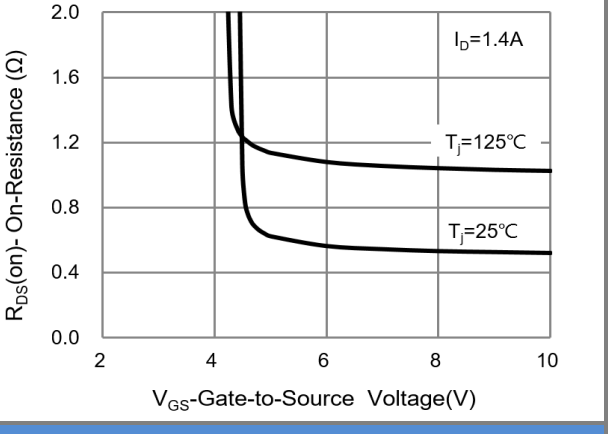


Fig.5 On-Resistance Variation with V_{GS}

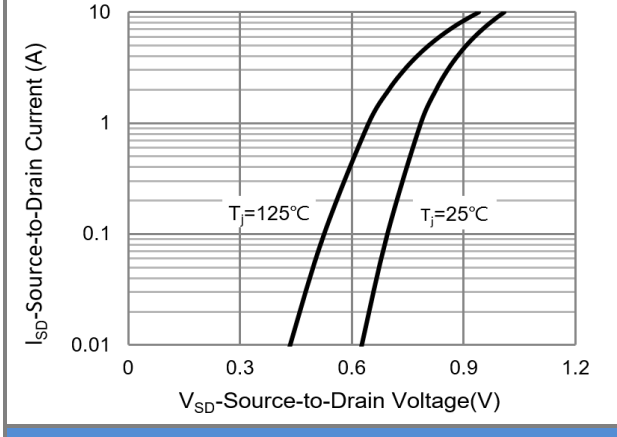


Fig.6 Source-Drain Diode Forward Voltage

PJD60R540E / PJP60R540E / PJF60R540E

TYPICAL CHARACTERISTIC CURVES

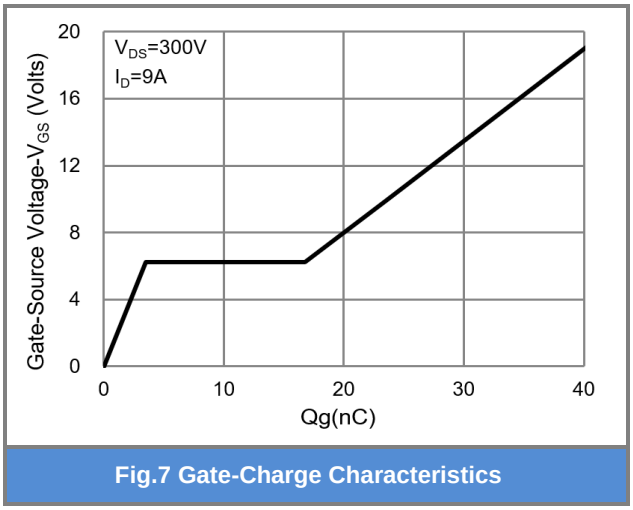


Fig.7 Gate-Charge Characteristics

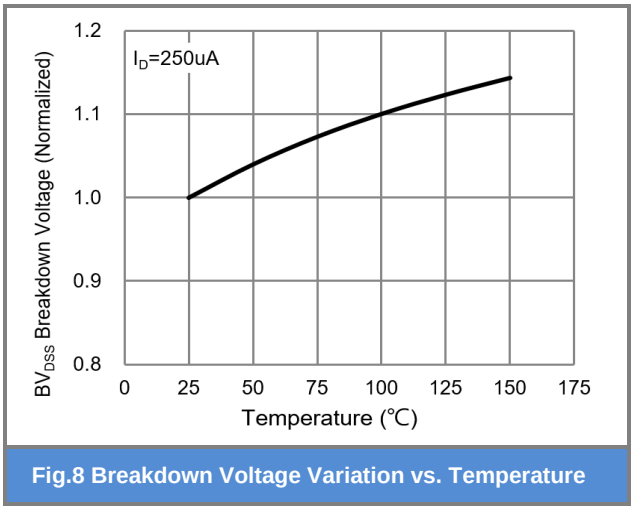


Fig.8 Breakdown Voltage Variation vs. Temperature

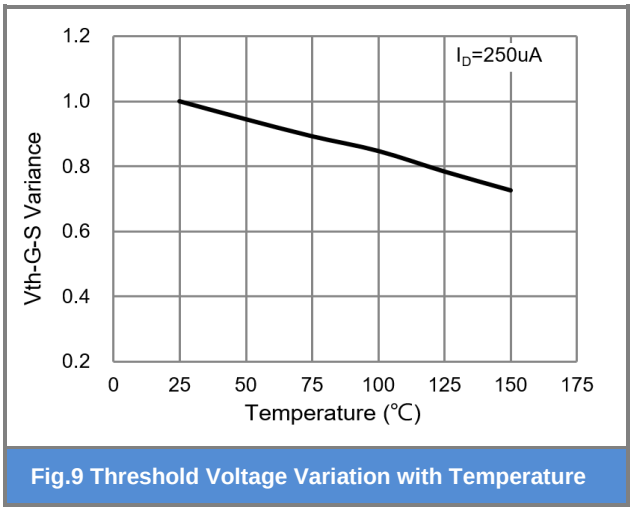


Fig.9 Threshold Voltage Variation with Temperature

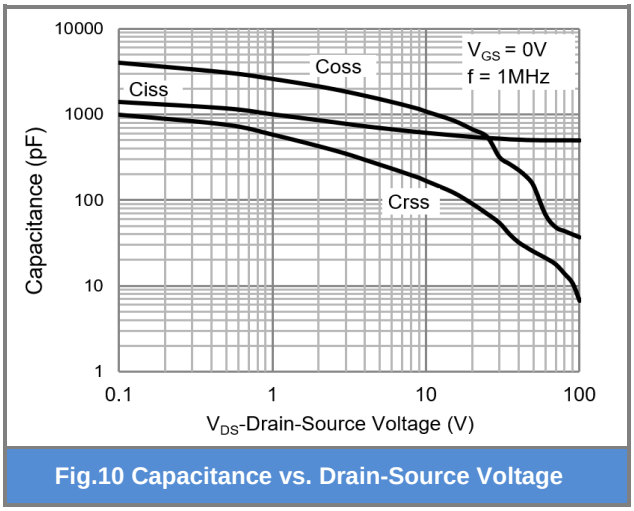


Fig.10 Capacitance vs. Drain-Source Voltage

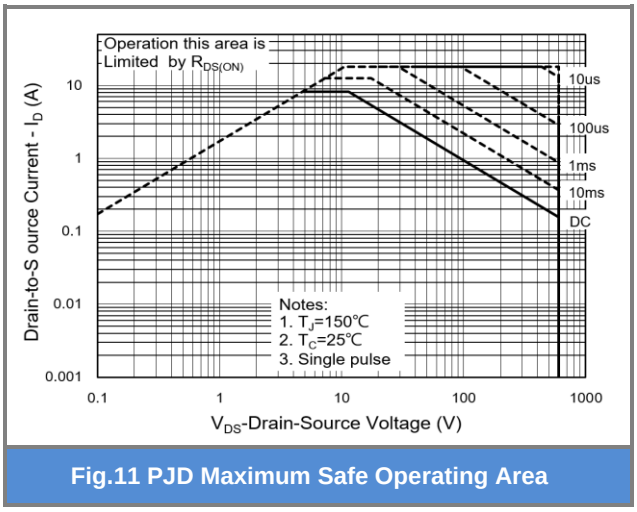


Fig.11 PJD Maximum Safe Operating Area

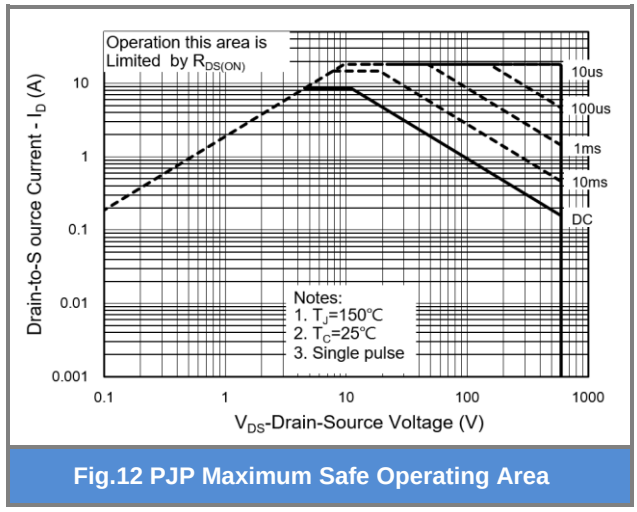


Fig.12 PJP Maximum Safe Operating Area

PJD60R540E / PJP60R540E / PJF60R540E

TYPICAL CHARACTERISTIC CURVES

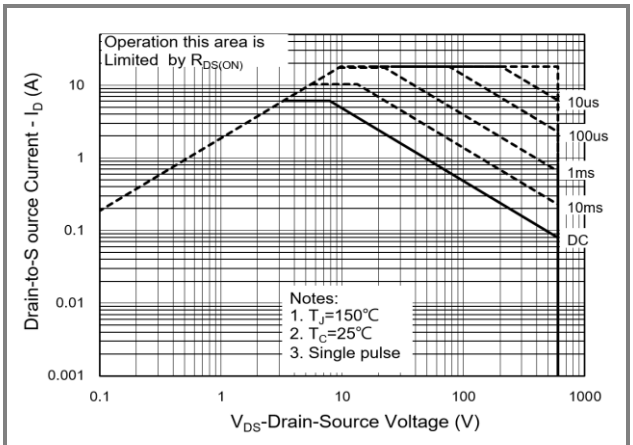


Fig.13 PJF Maximum Safe Operating Area

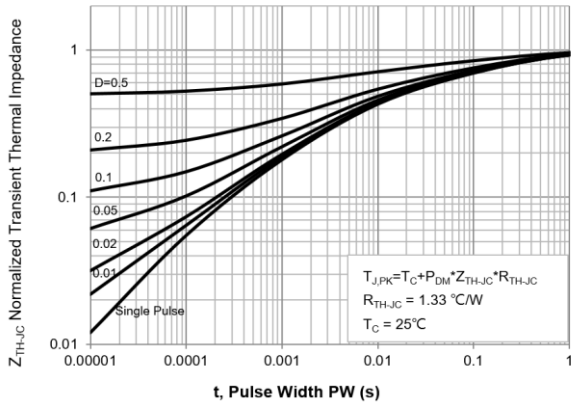


Fig.14 PJD Normalized Transient Thermal Impedance

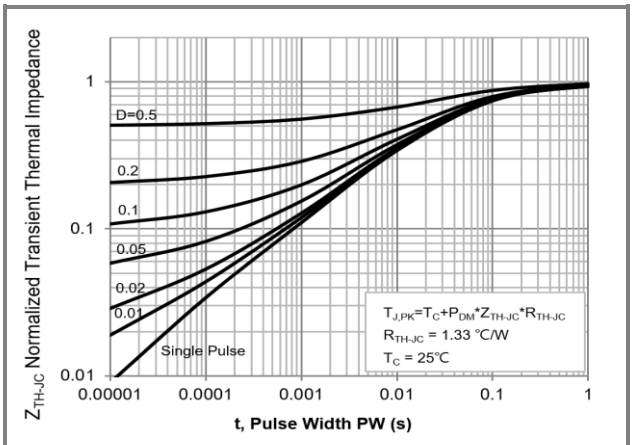


Fig.15 PJP Normalized Transient Thermal Impedance

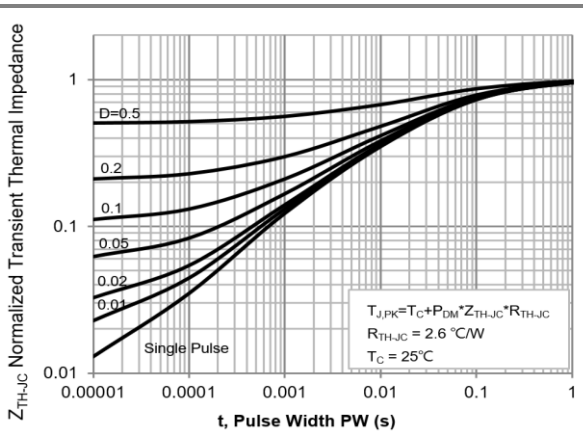


Fig.16 PJF Normalized Transient Thermal Impedance

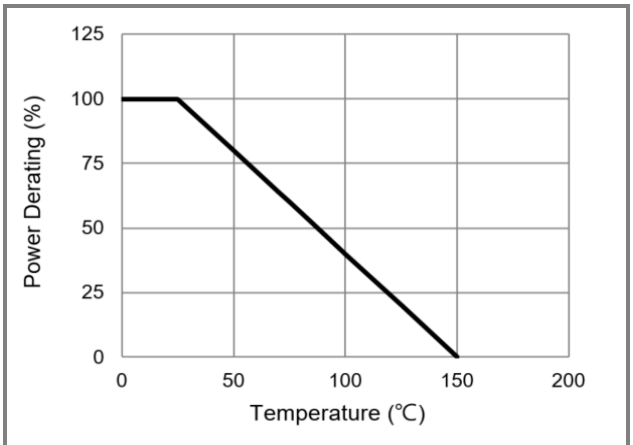


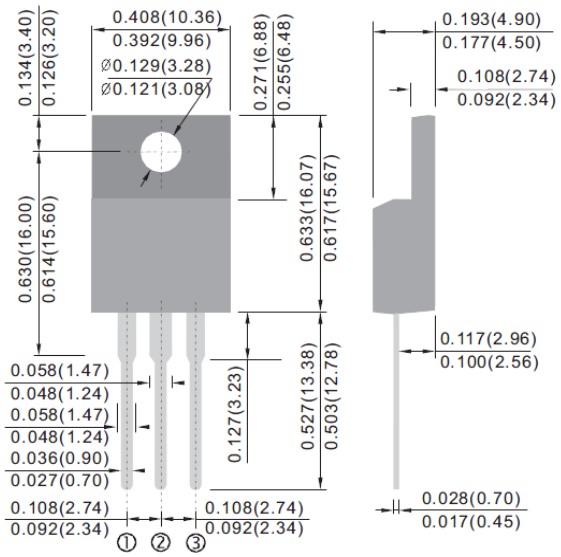
Fig.17 Total Power Dissipation

PJD60R540E / PJP60R540E / PJF60R540E

Packaging Information

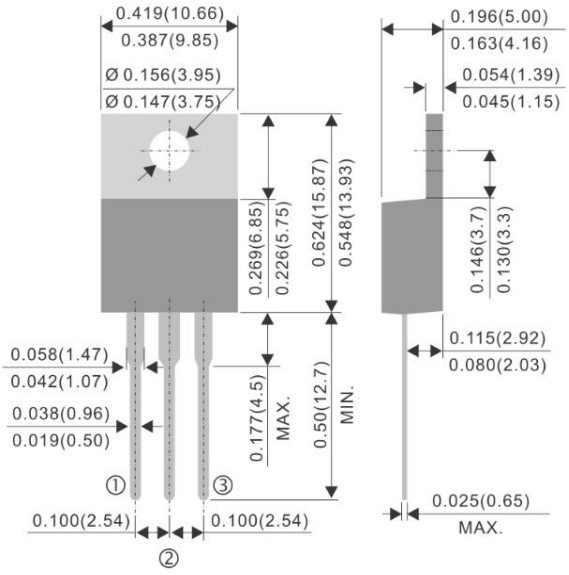
ITO-220AB-F Dimension

Unit: inch(mm)



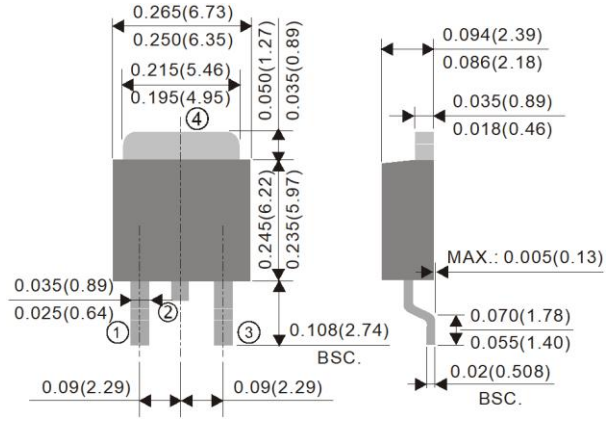
TO-220AB Dimension

Unit: inch(mm)



TO-252AA Dimension

Unit: inch(mm)



PJD60R540E / PJP60R540E / PJF60R540E

Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJD60R540E_L2_00001	TO-252AA	3,000pcs / 13” reel	60R540E	Halogen free
PJP60R540E_T0_00001	TO-220AB	50pcs / Tube	60R540E	Halogen free
PJF60R540E_T0_00001	ITO-220AB-F	50pcs / Tube	60R540E	Halogen free

PJD60R540E / PJP60R540E / PJF60R540E

Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.
- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.

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.