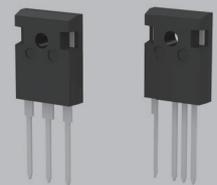


**Contributes to Energy Conservation  
by High Speed Switching**

Saving energy is a priority in new industrial and communication devices, as energy needs grow worldwide. Moreover, power supplies for these devices are becoming smaller in answer to space-saving efforts and device downsizing. To meet these needs, Fuji Electric developed a high speed discrete IGBT "High speed W series."

- High speed switching characteristics  
(40% reduction in turn-off loss)\*1
- 4-pin package with an additional sub-emitter terminal  
(TO-247-4) is added to lineup
- $T_{jmax}=175^{\circ}\text{C}$  guaranteed



Package: TO-247, TO-247-4

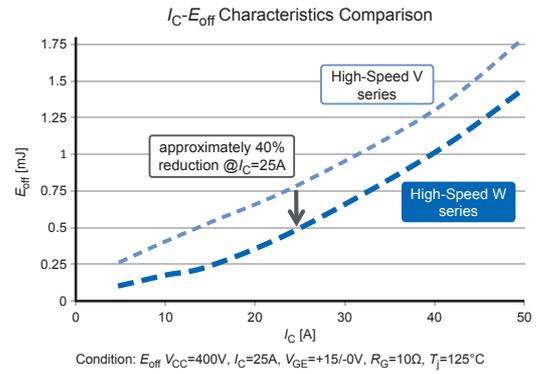
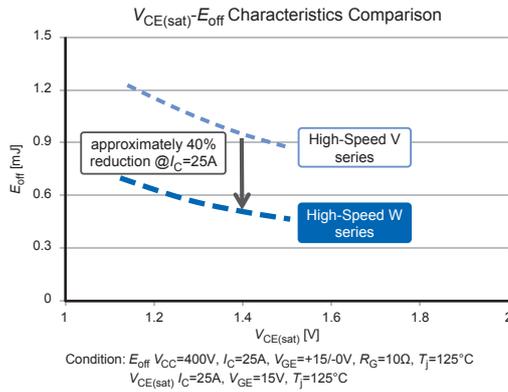
Usage examples: Welding machine, UPS, power conditioner, air conditioner,  
PFC circuit for various switching power supplies, inverter circuit, etc.

# 1. High Speed Switching Characteristics (40% Reduction in Turn-off Loss)\*1

Improving  $V_{CE(sat)}-E_{off}$  trade-off



40-50% reduction in switching loss compared to High-Speed V series

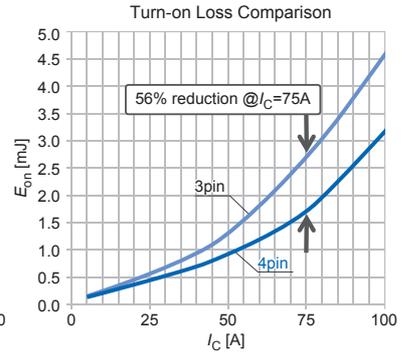
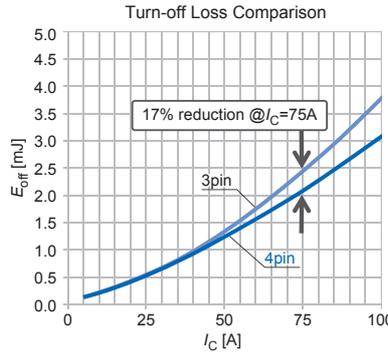
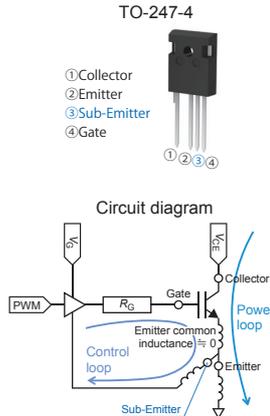


# 2. 4-pin package with an additional sub-emitter terminal (TO-247-4) is added to lineup

Reduction in the inductance of gate-emitter loop by adding a sub-emitter terminal



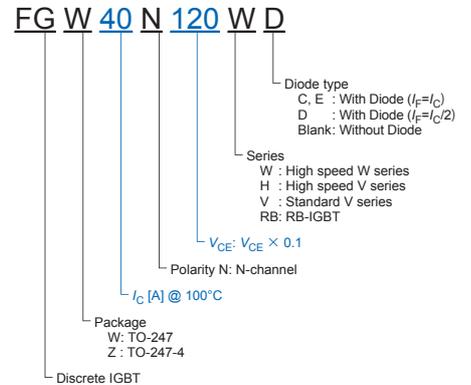
17% Reduction in turn-off loss and 56% reduction in turn-on loss compared to TO-247 package (3-pin)



## Product Line-up

$V_{CE}$ (V)	$I_C$ (A)	$V_{CE(sat)}$ (V)	$E_{on}$ (mJ)	$E_{off}$ (mJ)	$Q_G$ (nC)	Device Type			Package
						Without Diode	With Diode ( $I_F=I_C/2$ )	With Diode ( $I_F=I_C$ )	
650	40	1.8	0.29	0.29	180	FGW40N65W	FGW40N65WD	FGW40N65WE	TO-247
	50	1.8	0.42	0.46	215	FGW50N65W	FGW50N65WD	FGW50N65WE	TO-247
	50	1.8	0.12	0.40	215		FGZ50N65WD	FGZ50N65WE	TO-247-4
	60	1.8	0.60	0.67	250	FGW60N65W	FGW60N65WD	FGW60N65WE	TO-247
	75	1.8	0.95	1.20	300	FGW75N65W		FGW75N65WE	TO-247
	75	1.8	0.37	0.68	300			FGZ75N65WE	TO-247-4
1200	25	2.0	0.90	1.30	80	FGW25N120W	FGW25N120WD	FGW25N120WE	TO-247
	40	2.0	2.80	1.60	120	FGW40N120W	FGW40N120WD	FGW40N120WE	TO-247
	40	2.0	1.10	1.40	120			FGZ40N120WE	TO-247-4

## Meaning of Device Type



\*1 Comparison to the conventional products (High-Speed V series)

## ⚠ Safety Precautions

- \* Before using this product, read the "Instruction Manual" and "Specifications" carefully, and consult with the retailer from which you purchased this product as necessary to use this product correctly.
- \* The product must be handled by a technician with the appropriate skills.

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